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Region IV (Pilot Project)
Parts 1 and 2

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ENVIRONMENTAL MANAGEMENT REPORT

REGION IV

(PILOT PROJECT)

PARTS 1 and 2

NOTE: This report was prepared primarily as an internal document.

MAY 1983

REGION IV ENVIRONMENTAL MANAGEMENT REPORT

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INTRODUCTION

The eight southeastern states of EPA Region IV are richly endowed with a wide variety of often fragile environs. High quality air, land, and water, from the Appalachian Mountains, to the Gulf and Atlantic coasts, to the many inland streams and lakes, has been the heritage of Southerners for generations. Today, as part of the "Sunbelt," the population and economy of the Southeast are growing faster than in most areas of the United States, and the threat to its environmental heritage is now greater than ever before. The challenge of the 1980's for Region IV is to improve and maintain the environment in ways that are compatible with this increased growth.

This report is directed toward the details of this challenge through a definition of environmental problems in the Region and a discussion of what actions need to be taken by EPA management to resolve these problems. Included in the report are discussions of areas in which EPA has regulatory authority:

- o Air quality,
- o Water quality,
- o Drinking water quality,
- o Groundwater quality,
- o Wetlands,
- o Hazardous Waste Control,
 - Hazardous waste treatment, storage, or disposal as specified in the Resource Conservation and Recovery Act (RCRA),
 - Screening and clean-up of inactive disposal sites and spills under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, also called "Superfund"),
- o Radiation, and
- o Pesticides.

This document is intended to focus attention on environmental problem areas and issues that need to be addressed in the near future by top level management. This focus is not intended to ignore the very extensive accomplishments made in the past or

to find fault with previous environmental efforts; it is intended primarily to help management determine where best to devote its increasingly scarce resources. Recognizing, however, the interest in documenting positive results, a short summary of accomplishments for each medium or program is included in the Executive Summary.

One issue that cuts across all media lines is the need for sound, current environmental data in an efficient management system (preferably a versatile automated data processing system). Such a system must be capable of a wide variety of analyses and presentation schemes. If future Environmental Management Reports (EMRs) are to become a basis for managing for environmental results, the Agency must make a renewed commitment to the various monitoring programs as well as to the support of effective data management systems.

Finally, as a follow-up to this EMR, Region IV intends to develop an intermedia ranking or clustering of geographical and/or generic environmental problems within the Southeast. This exercise will require careful coordination between programs and the states and will be addressed in a follow-up document at a later date.

PART I

EXECUTIVE SUMMARY: OVERVIEW OF ENVIRONMENTAL STATUS AND TRENDS

AIR QUALITY

It should be noted that data used in this report are those available to EPA up until the February 3, 1983 Tier II list publication in the Federal Register. EPA expects the states to provide additional information, not available to EPA at that time, which may effect changes in the attainment or non-attainment designations. Timing of this report will not allow identification of those changes.

Over the past 10 years, air quality in the Southeast has shown marked improvement, particularly in reductions in total suspended particulates and sulfur dioxide. Virtually all total suspended particulate and sulfur dioxide emissions sources are in compliance with emissions standards. The major work remaining is in the areas of reducing automobile-related air pollutants, and also in maintaining the high degree of air quality attained.

An extremely high level of compliance by air pollution sources has been developed by EPA working through the states. Region IV leads the nation in delegation of programs to the states. This is a result of the initiative of the states to assume new responsibilities.

Several previous non-attainment areas have attained the national ambient air quality standards and are maintaining them. Resolving the remaining non-attainment status for several areas in Region IV is the top priority. A number of areas are not currently designated as non-attainment but are experiencing violations of the standards. Approximately 11 million people live in projected non-attainment areas. EPA needs to resolve the current sanctions activity and then proceed with non-attainment area redesignations. Some of these are rural ozone non-attainment areas.

Region IV has five areas where compliance with carbon monoxide and ozone standards have been extended to 1987. Region IV also has the highest percentage of tampering and fuel switching in the nation. The Region needs to become more active in implementing transportation control measures.

A number of SIP revisions have not been completed. National policy needs to be revised before several of these can be resolved, such as dual source definition and generic bubble regulations.

In a number of areas, ambient air monitoring data recovery is incomplete. The Region needs to work closely with the states to obtain adequate data to make attainment/non-attainment redesignations.

The Region is working with the states and TVA to develop an acid rain monitoring network. This effort must be maintained to determine the extent of the acid rain problem in the Southeast.

The Southeast is one of the most rapidly growing areas in the nation. To ensure regional consistency and compliance with applicable air quality standards, the Region must closely oversee the review and permitting of new sources and source modifications.

Historically, the Region has experienced a high degree of compliance by major air pollution emission sources. However, a pattern is emerging of formal enforcement actions being replaced by informal enforcement actions, resulting in increasing levels of noncompliance. Region IV is implementing a program to correct this enforcement and noncompliance problem.

Problems are emerging as more complex chemicals are emitted into the atmosphere from new technology industries, hazardous

waste incinerators and chemical dump sites. In many cases, these chemicals were present at sources where previous emphasis was on the criteria air pollutants. The state and local agencies are finding they are not adequately prepared to resolve these problems. EPA needs to provide policy, guidance and technical information on these problems.

WATER QUALITY

Between 1973 and 1980, more than nine billion dollars of public and private funds were spent for treatment of domestic and industrial wastewaters in the Southeast. Unfortunately, rapid population and industrial growth in the Southeast has outstripped the rate of expenditures for clean-up actions, and many historic problems with conventional pollutants (decomposable organics, bacteria, viruses, solids and nutrients) still exist.

In terms of domestic waste treatment, there are two major concerns:

- o Inability of many small communities to fund adequate waste treatment facilities.
- o Inadequate operation and maintenance at many of the large, modern sewage treatment facilities. Lack of funding and poorly trained personnel are major factors contributing to this problem.

These continuing problems with conventional pollutants have been overshadowed by a whole new suite of problems resulting from the chemical revolution, land development, and energy development.

Increased production and use of chemicals pose a hazard to surface waters at numerous locations in the Southeast from industrial process water discharges, runoff or seepage from hazardous liquid and solid waste disposal sites, and intensive use of agricultural pesticides in some areas (e.g. Mississippi Delta of southeast Tennessee and northeast Mississippi). Land development poses significant problems in coastal states due to loss of valuable wetlands, health hazards from inadequate domestic waste disposal practices and the impact of increased insecticide use on valuable finfisheries and shellfisheries. Coal mining and attendant syn-fuel projects in Appalachia and peat mining on the North Carolina coast are emerging problems that pose significant potential for damage to surface water supplies and aquatic life.

Runoff from abandoned, noncoal mined areas is also a threat to surface waters. Some examples are mica and feldspar mining areas on the North Toe and Nolichucky River, brown iron areas in north Alabama (e.g., Bear Creek), and the phosphate mining regions of Florida, middle Tennessee and eastern North Carolina.

Over the past 10 years, approximately 4.3 billion dollars have been obligated to municipalities for the purpose of constructing needed wastewater treatment facilities in the Southeast. Over this time period, states have oriented their priority lists to direct funds to the most critical water quality problem areas. The construction grants program has evolved primarily to a program where states have the lead responsibility and the Federal role is that of overview. NPDES permits have been issued to all municipal and industrial facilities within the Region. As with the construction grants program, the NPDES program has been largely delegated to the states.

In spite of the remaining problems, a large number of significant water quality improvements have been made over the last decade. Conventional pollutants such as BOD, pH extremes, oil and grease, and fecal coliforms are usually within established limits although several localized exceptions remain. When these parameters do exceed their limits, they seldom reach the extremes or duration of a decade ago.

Even in controlling toxicity many accomplishments have been made: the "mercury scare" of the early 1970's has largely been brought under control; the known persistent pesticides, including PCB's, are now banned or controlled and their residuals in the aquatic environment are gradually decreasing. Advanced instrumentation and bioassay methods have allowed chemists and biologists to detect much lower levels of toxicity than ever before. This often gives the impression that toxicity problems are increasing, but being aware of these problems allows the regulatory agencies to address them sooner, and thus provides an increased level of environmental protection. The challenge for the next decade is to continue the progress already made through renewed commitment employing state-of-the-art technology.

DRINKING WATER

Although isolated problems exist, drinking water supplies in the Southeast are generally of good quality. Individual bacteriological maximum contaminant level (MCL) and monitoring and reporting (M/R) violations in Florida and Kentucky are numerous. Florida and Kentucky are also experiencing high rates of persistent violations (those continuing for more than 3 months per year). Both

individual and persistent violation rates well in excess of the national average indicate a need for immediate and increased attention to the drinking water program by these states.

Contamination of existing sources by synthetic organic compounds is also of growing concern and seems to be prevalent in some isolated sections, most notably in the south and central portions of Florida. Because data on synthetic organic compound contamination are limited, no region-wide summary of information is available. Trihalomethane contamination of potable water is occurring but control programs are, or soon will be, in place to handle problems.

Quantity of suitable water available for potable use is a growing concern in the Southeast, particularly along the coastal areas. Water shortage issues have been identified as a medium priority problem for Region IV. As demands for water increase, quantity may become an even more important issue.

Turbidity monitoring and reporting violations in Kentucky have also been identified as a medium priority problem.

The Safe Drinking Water Act (SDWA) provides the framework for a Regional program to assure the safety of drinking water supplies. The Act established the Public Water Supply Supervision (PWSS) program to protect public health by ensuring the quality of drinking water provided by public water systems. The legislation provides for delegation of implementation responsibility of the PWSS to the States. By March 14, 1980, all Region IV states were delegated the responsibility to implement the PWSS program.

Since 1976 (date of the initial development grant) \$33,863,500 has been allocated to the eight states in Region IV in the form of grants to develop and implement a State PWSS program. As a result of the initial grant and subsequent grants, the states have been able to develop a better inventory of community water supplies and population served by each; a more comprehensive monitoring of drinking water quality; the percentage of community water supplies performing complete analysis for microbiological standards has improved, resulting in a safer, higher quality drinking water.

The most noticeable accomplishment in the PWSS program is the development of more effective state programs. This effectiveness is noticed in the purchase of new sophisticated instrumentation by State laboratories which give them the capacity to measure organic contaminants down to very low concentrations. Many states have expanded their operator training and certification programs. Finally, the states have increased their knowledge in better

scientific understanding of the nature and control of organic contaminants in drinking water and their effects on human health

GROUNDWATER

Groundwater is a resource of major importance to the Southeast. An estimated 70 percent of the Region's population obtains drinking water from groundwater sources; virtually all of the drinking water in rural areas come from groundwater. Adequacy of groundwater supplies to meet future demands will become an increasingly important concern.

In most of the Southeast, groundwater has not received much public attention until recently. Federal and state efforts to protect groundwater have lagged behind those to protect surface water. In fact, many of the measures taken to protect these other resources have increased wastes to the land surface or directly to the subsurface.

Severe groundwater degradation problems tend to be highly localized, but in parts of the Atlantic-Gulf Coastal Plains and most of Florida the problems are more pervasive. The full extent of groundwater quality problems is not well known due to the lack of monitoring.

The existing legal and institutional structure is clearly not capable of providing adequate protection for groundwater resources. Although implementation of new federal programs under RCRA, Superfund and SDWA will mitigate part of the pollution threat to groundwater, much work still remains to be done.

WETLANDS

The Southeast is bordered by more than 2000 miles of coastline and contains expansive salt and freshwater marshes and swamps and a network of freshwater streams, rivers, and lakes that provide enormous economic and recreational resources. Losses of these wetlands went virtually unchecked until the passage of the Clean Water Act of 1972 and the Corps of Engineers' 1975 regulations implementing Section 404 of the Act. Data accounting for wetland status are not readily available. Experience indicates, however, that saltwater wetlands losses have been significantly reduced as a result of implementation of Section 404 but that freshwater losses continue essentially uncurtailed.

Region IV faces significant wetland-related environmental challenges under the Clean Water Act mandate to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters." The more serious and immediate conflicts with this mandate include:

- o large scale clearing and draining of bottomlands, swamps, and freshwater marshes for conversion to agricultural and/or timber production;
- o lack of suitable dredge material disposal areas, which results in the filling of valuable wetlands and shallow, productive estuarine waters;
- o removal or degradation of wetland and aquatic resources resulting from residential expansion, marina development, untreated urban runoff, etc.; and,
- o surface mining in wetlands where the potential for reclamation and restoration to pre-existing conditions is limited or unproven.

Management and policy factors that merit consideration are:

- o weakened Memorandum of Agreement between the Environmental Protection Agency and the Corps of Engineers that largely restricts EPA's ability to significantly influence decisions regarding wetlands where conflicts between the two agencies occur;
- o Corps' delegation of Section 404 program administration to the states via broad-ranging, state-wide general permits, which may circumvent EPA's statutory responsibility for directing state assumption of the program;
- o a perception by a significant segment of the general public that EPA is not recognizing the importance of wetlands in relation to water quality. There appears to be a concern by some states and other groups that EPA is not striving to protect wetlands, especially freshwater wetlands, and that EPA has relinquished to the Corps responsibilities delegated to EPA under Section 404. There is strong support for EPA to maintain an aggressive stance regarding all wetlands (Section 404) issues.
- o limited staff and travel resources;
- o lack of consistent guidance in policy from EPA or states on protection of the freshwater wetlands;

- o lack of a system to account for wetland losses; and
- o policy effects of ongoing "regulatory reform" efforts.

Considerable progress has been accomplished within Region IV with the cooperation of industry, the states, the Corps of Engineers and other interested federal agencies in generic problem assessment and development of guidelines for minimizing environmental degradation, establishing design and siting criteria, and identifying appropriate management practices. Noteworthy examples include wetlands categorization and restoration techniques developed during the EIS preparation addressing phosphate mining in Florida wetlands, and joint interagency development of guidelines on criteria for siting, design and evaluation of freshwater dead-end canals. Work in progress which is expected to yield similarly useful environmental guidance includes an EIS in the preparation phase for oil and gas exploration, development and production in coastal wetlands and state waters of Alabama and Mississippi; a joint EPA/COE EIS in preparation addressing coastal wetlands conversion to farming operations in North Carolina; and a study of coastal marina impacts and design optimization.

Each of these examples shares common characteristics which Region IV considers essential to long term problem solving. First, they have included industry, multi-state and federal agency cooperation. Second, they have yielded, or are anticipated to yield, useful and specific guidance tools for future similar projects. Third, and most importantly, the benefit of these studies is reduced degradation of the aquatic environment as these study conclusions and guidance provisions are implemented.

HAZARDOUS WASTE CONTROL

o RCRA

The RCRA program regulations became effective in November 1980. Since that time, the interim status standards have been implemented. Compliance with these standards is in varying degrees depending upon the individual facility. Permit applications are being called from existing facilities and permits are being processed now. Emphasis is on groundwater protection and financial assurance requirements.

The RCRA permit program will minimize the impacts of hazardous wastes on the surface water, groundwater and air resources of the Southeast. Groundwater contamination is caused by active

RCRA facilities, CERCLA sites, improperly closed dumps and sanitary landfills and septic tanks that were improperly located before the solid waste regulatory program began in the early 1970's.

Some RCRA incinerators will require retrofitting as a permit condition to meet the destruction efficiency required. Land disposal facilities are adversely affecting air quality, although no data base exists for quantification at this time.

Principal problem areas for the hazardous waste program primarily relate to resource needs in issuing RCRA permits, authorizing state hazardous waste programs, and conducting compliance and enforcement programs. The workload associated with these activities is expected to be great. In addition, inconsistencies in the regulations allow some hazardous waste to "get out" of the RCRA system, and inadequate data exist to identify problems in some areas at this time.

o Superfund

At this early stage in the implementation of the Superfund program, most problem areas are of an administrative/programmatic nature rather than of a physical environmental nature. It will be several more years before the Region will have suitable data on its 3000 uncontrolled hazardous waste sites with which to establish trends for types and quantities of waste, affected media, and hazards to public health. It is evident, however, that exposure of groundwater to hazardous contamination is the most significant geographical concern related to the Superfund program in Region IV. This is particularly true in the State of Florida, where aquifers which supply drinking water for residents are threatened and where one-half of the Region's NPL sites are located. The significance of the groundwater threat is highlighted by the Matrix of Problems at Region IV NPL Sites and the aquifer map in the Superfund section of Attachment A. Organics and heavy metals that have been found at many Superfund sites include polychlorinated biphenyls (PCBs), 1,1,1-trichloroethane, toluene, benzene, and pentachlorophenol.

One of the most significant administrative problems delaying the implementation of Superfund is the requirement for state matching funds. If high priority hazardous waste sites are to be cleaned up and Superfund is to complete its mission by 1985, the cooperation of the states is imperative. The states must be encouraged to become more creative in developing funding mechanisms for this program. Removing requirements for state matching funds for remedial investigations and feasibility studies could alleviate the dilemma somewhat by providing state legislatures with "harder" figures as the basis for matching fund requests.

A second management problem delaying program implementation is unclear policy guidance for enforcement activities and cost recovery actions. Unclear policies increase the amount of time required to put together an enforcement agreement between the state and EPA to fund remedial activities. Extensive reviews required at state, regional, and headquarters levels lengthen the process further. This point is particularly relevant for Region IV where enforcement cleanup is being pursued at a majority (63 percent) of NPL sites.

EPA's response to uncontrolled hazardous waste sites has developed from one of emergency cleanup of sites discharging to, or threatening, surface water to cleanup of multi-media discharges of hazardous substances via several response alternatives: immediate removal, planned removal, and remedial actions. Increased independence from the U.S. Coast Guard over the past 10 years has improved the Agency's program greatly.

The Region has operated on the philosophy that the environment is benefited more by the spill that does not occur than the one litigated successfully. Toward that end, the staff has used numerous techniques to encourage industry to implement preventive programs. A decade of these efforts are beginning to pay off. Additionally, state and local agencies have become much more aware of threats imposed by chemical accidents and the resources required to cope with them.

Since the passage of the Superfund legislation in 1980, Region IV has worked closely with state and local agencies and private parties to clean up abandoned hazardous waste sites. Despite complex enforcement and contracting requirements, contamination at two sites in Mississippi and Georgia was completely removed during 1982. Cleanup of a third site, the PCB spills in North Carolina, was completed in early 1983. In addition, hazards at 18 sites throughout the Southeast have been removed via the immediate removal program.

RADIATION

Region IV has the largest number and greatest variety of environmental radiation sources of any region in the country. The potential population at risk causes EPA to be deeply involved in the environmental impact of all man-made activities as well as natural radiation sources. Fundamental issues involve potential radioactive contamination of ground water as a result of poor radioactive waste disposal management; population radiation exposure from radioactive accidents at one of the twenty (20) operating nuclear power plants in the region; accidents involving transportation of radioactive materials; inhalation of radioactive radon gas being emitted from radium-226 deposits in the soil; overexposure to non-ionizing radiation

sources and radioactive contamination of drinking water from multiple radiation sources. The Region IV Environmental Radiation Program in cooperation with state and other federal agencies is designed to establish controls for all of the above.

PESTICIDES

The use of pesticides is proportionately greater in Region IV than in other areas of the country. Over 300,000 private and 50,000 commercial applicators have valid certifications to apply restricted use pesticides. In addition to numerous agricultural and forest pest problems, Region IV has extensive aquatic weed and drift problems. Exotic weeds such as hydrilla, water hyacinths and Eurasian milfoil are firmly established in Southern waterways, causing many of them to be virtually unusable for recreation, transportation, fish propagation, or in some cases, flood control. Mosquito control through aerial application poses a real threat to sensitive non-target organisms in the 2000+ miles of coastline and in wetlands areas (2,200,000 acres of saltwater, and 32,000,000 acres of freshwater). Misuse of mosquitocides makes the contamination and drift issues particularly important in this Region from the standpoint of protecting fisheries and other aquatic resources.

Priorities in the pesticide State/EPA Cooperative Agreements identify two areas of particular concern year after year. These two problem areas are drift resulting from aerial application of pesticides and the misuse of pesticides by PCOs (pest control operators). The 1978 amendments to FIFRA made the states responsible for investigating and enforcing "pesticide use." In an attempt to reduce the large economic losses resulting from drift onto nontarget crops, State Agriculture Departments and Cooperative Extension Services, with Federal assistance, have begun to direct resources toward new methods of training for aerial applicators. Conducting "fly ins" (wherein aerial applicators are educated and application systems are calibrated) is one step toward solving this continually recurring problem. Monitoring the activities of PCOs remains a resource intensive function within the Region IV states, and while many successes have been identified, many problems remain.

The Regional pesticides program has implemented programs to certify and train applicators, educate the public on the benefits and hazards of pesticides, and enforce FIFRA. At the time the enforcement, inspection, and investigation programs were initiated, random sampling of pesticide products during marketplace inspections, production establishment inspections and dealer monitoring showed 17 percent of these products to have chemically deficient active ingredients. During 1983, a random sampling showed a deficiency rate of about 4.5 percent, an improvement of over 350% for the 10-year period as a result of the inspection, investigation, and enforcement program.

Public awareness programs initiated in the Region and the certification and training of private and commercial applicators in the application and handling of restricted use pesticides have reduced pesticidal accidents and misuse. Dramatic reductions in complaints of misuse of pesticides in aerial applications have been noted in Mississippi (from 411 in 1981 to 61 in 1982) as a result of education, training, and enforcement. The result of this training is that less pesticides are being drifted onto nontarget crops and unregistered sites, thus reducing the attendant economic damage and hazard. Fishkills from pesticide runoff and aerial drift have been greatly reduced in the Region. While the number of agricultural acres to which pesticides are applied continues to grow in the Southeast, the actual tonnage of chemicals applied has decreased as a result of new formulations. The long lasting residual chlorinated hydrocarbons, applied at a rate of gallons per acre, have to a great extent been replaced by synthetic pyrethrins and other compounds that biodegrade rapidly and are applied at a rate of ounces per acre.

Groundwater contamination resulting from agricultural pesticides has been documented in the Region and has resulted in one state-wide suspension of a particular pesticide. Such decisions to suspend pesticides are based not on whether the compound was "misused," but on whether groundwater contamination has occurred. The pesticides/groundwater contamination issue is likely to grow, both geographically within the Region, and with additional compounds in the future.

The inordinately large amounts of pesticides applied in Region IV cause significant potential problems with regard to both storage and disposal of pesticide containers and waste. The potential magnitude of these problems is indicated by the fact that there are an estimated 350,000 certified applicators storing and disposing of restricted use pesticide containers.

Improvement and registration of pesticide labels, along with registration of pesticide production and marketplace establishments, have achieved two goals of the Regional pesticides program. The Regional office has a clear understanding of where and what kinds of pesticides are produced in the Southeast, and more compliance with regard to annual reporting has been achieved. The long term goal of this enforcement effort is to reduce the availability of unregistered products or products from unregistered establishments. The ability to pick up unregistered products through routine field inspections, commonplace 10 years ago, has become increasingly difficult. Thorough inspections and investigations frequently discover no products at production establishments that violate the registration requirements of labeling and packaging. The benefit to the environment is enormous - the products ultimately formulated, distributed, and applied have

undergone the extensive safeguards built into the Agency's registration process. The inspection and enforcement efforts of the Regional staff have resulted in much improvement in the pesticide impact on the environment.

PART 2

DISCUSSION OF SIGNIFICANT ENVIRONMENTAL PROBLEMS AND IMPLICATIONS FOR AGENCY MANAGEMENT

AIR QUALITY

1. Environmental Problems, Causes, and Barriers to Resolution

a. Most Significant Problem - Non-attainment Areas

The most significant problem is the need to attain the national ambient air quality standards affecting 11 million people (26 percent of the total regional population) in 29 designated "Tier II" non-attainment areas and in 23 additional emerging and continuing non-attainment areas.

Based on the results of a survey, Region IV has the highest incidence in the nation of tampering with vehicular pollution control devices (22 percent) and fuel switching (19 percent). The national average is 17 percent for tampering and 12 percent for fuel switching. Region IV is concerned that tampering and fuel switching may be negating progress made through transportation control measures, including the Federal Motor Vehicle Control Program.

(1) Tier II Areas

EPA's February 3, 1983, proposed finding of non-attainment, as published in the Federal Register, identified 29 Region IV counties as not having attained the national ambient air quality standards by the December 31, 1982, deadline. Approximately 8 million people live in these 29 counties. A brief description of the areas follows:

- o Jefferson County, Alabama, has not met the national ambient air quality standards (NAAQS) for total suspended particulates (TSP) and ozone (O₃). In addition, the State of Alabama does not have an approved TSP SIP for this area.
- o Etowah County, Alabama, does not have an approved TSP SIP.
- o Dade, Broward and Palm Beach Counties, Florida, have not met the NAAQS for ozone.

- o The Atlanta Metropolitan Area (including Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Fulton, Gwinnett, Henry, Paulding and Rockdale Counties) did not attain the NAAQS for ozone.
- o Bell, Boyd, Henderson, Jefferson, McCracken Counties and the cities of Newport, Richmond and Corbin, Kentucky, have not met the NAAQS for TSP.
- o Shelby County, Tennessee, does not have an adequate SIP for demonstrating attainment of the TSP NAAQS.
- o Sullivan County, Tennessee, has not met the NAAQS for TSP.
- o Knox County, Tennessee, has not met the NAAQS for carbon monoxide (CO).

(2) Extension Areas

Five areas in Region IV with a population of 3.7 million people have extensions to 1987 for attaining the NAAQS for carbon monoxide and ozone. These are Atlanta, Georgia (CO); Jefferson County, Kentucky (CO and O₃); Charlotte, North Carolina (CO); Nashville, Tennessee (CO); and Memphis, Tennessee (CO).

A sixth area, Boone, Campbell and Kenton Counties in northernmost Kentucky, has an extension for ozone. However, the 1982 SIP for the area now projects attainment by December 31, 1982 and would withdraw the extension request. In the February 3, 1983, Federal Register only the Charlotte, Atlanta, and northern Kentucky SIPs were proposed for approval. In addition, Atlanta, Georgia (O₃); Birmingham, Alabama (O₃); Southeast Florida (O₃) and Knox County, Tennessee (CO) have been identified as Tier II areas where new regulation with additional transportation control measures (TCMs) will be needed. Additional inspection/maintenance programs may be needed for these new areas.

(3) Emerging and Continuing Non-Attainment Areas

Region IV has at least 23 counties, with a total population of over 3 million people, that are currently designated non-attainment and may remain non-attainment through 1984 as well as areas that may require a redesignation to non-attainment. These areas that are currently non-attainment are below the Tier II cutpoints. The Region projects that all of these areas may not be attaining or maintaining the standards by 1984.

The following is a listing of the 23 counties by state and pollutant.

- o Alabama - Russell and Etowah Counties (O₃)
- o Florida - Duval and Hillsborough Counties (TSP)
- o Georgia - Muscogee (O₃) and Chatham (TSP) Counties
- o Kentucky - Bullitt (TSP), Davies (TSP), Marshall (TSP), Muhlenburg (TSP), Pike (TSP), Carter (TSP), Boyd (O₃) and Greenup (TSP) Counties
- o Mississippi - Desoto (O₃) and Jones (TSP) Counties
- o North Carolina - Durham (CO) and Wake (CO) Counties
- o South Carolina - Richland County (TSP)
- o Tennessee - Hamilton (O₃, TSP), Columbia (TSP), and Davidson (TSP) Counties

In addition, data collected in several areas of Region IV, still officially designated non-attainment, demonstrate attainment of the ambient standards. This, in part, may be a result of the recent economic slowdown. Recovery of the economy will lead to increased industrial production with increased levels of air pollution that will probably cause violations to recur. Ashland, Kentucky; Chattanooga, Tennessee; Gadsden and Mobile, Alabama; Jones County, Mississippi; and Charleston, South Carolina are such areas.

(4) Rural Ozone Attainment Areas

Violations of the ozone standard were measured in 1980 in Durham and Raleigh, North Carolina (SMSA population of 531,167), and Etowah County, Alabama. During 1981, the Raleigh, North Carolina monitoring site operated less than 75 percent of the time during the ozone season. In 1982, data recovery was so sparse that it would be difficult to tell whether the ozone standard was attained in these areas.

In addition, Greensboro/Winston-Salem/High Point (SMSA population of 830,000), and Asheville (SMSA population of 177,761), North Carolina, do not have sufficient data to determine the attainment status for the ozone standard and are of sufficient size to exceed the standard.

Under present EPA policy, urban areas of less than 200,000 population that violate the ozone standard only have to adopt volatile organic compound (VOC) control regulations for sources emitting more than 100 tons per year. Region IV is faced with the possibility that an attainment plan will be needed for these "rural" ozone areas only requiring VOC regulations while other "urban" areas with smaller SMSAs are required to implement transportation control measures, including inspection and maintenance (e.g. Charlotte, North Carolina, with a SMSA population of 637,218). This presents a problem of consistency among major population centers.

b. Significant Problems (not ranked)

(1) Adoption of Major SIP Elements

States have not always been successful in developing SIPs. For example, Birmingham, Alabama, and Ashland, Kentucky, do not have approved Part D Attainment plans. Alabama, Florida, Mississippi and Tennessee do not have approved Section 111(d) plans for total reduced sulfur. Florida does not have approved Section 111(d) plans for phosphate fertilizer plants. Alabama, Florida, and Mississippi do not have approved Section 111(d) plans for fluoride emissions from primary aluminum reduction plants.

The following facts illustrate the need for having effective plans for these noncriteria pollutants in place. Total Reduced Sulfur (TRS) emissions continue to be a particular problem because Region IV has more than 50 percent of the nation's pulp and paper mills; these generate many nuisance odor complaints. Fluoride emissions have led to vegetative damage and loss of livestock. The Region has 90 percent of the national phosphate production capacity.

(2) Compliance

Historically, Region IV has experienced a high degree of compliance for major air pollution sources. This was achieved by establishing a close working relationship with state and local air pollution control agencies and coordinating efforts with them to assure early identification of compliance status and prompt initiation of appropriate enforcement action. As of March 19, 1983, Region IV and state and local agencies had identified 5545 (93 percent) sources in final compliance; 244 (4.1 percent) not subject to an applicable regulation; and 50 (0.8 percent) sources in compliance with an approved compliance schedule. Thus, 5839 sources (98.1 percent) were reported to be in a satisfactory compliance status. Of the remaining 116 sources, 81 (1.4 percent) were reported in violation and not subject to an approved compliance

schedule and 35 (0.6 percent) were reported to be of unknown compliance status. Of the 81 major sources in violation, 25 (only 0.4 percent of the total population) are currently identified as significant violators (Table AQ-1).

Region IV, as a part of the "New Federalism" approach, has shifted its policy of maintaining an active role in enforcement matters to a more passive role consisting primarily of reviewing state/local program compliance efforts and providing technical assistance as requested. Key elements in this effort are: the state/local programs operate a timely and effective "compliance monitoring system" to track compliance status or major sources and keep EPA fully informed in a timely manner of changes in compliance status; documentation of those changes is provided; and action plans are developed to address problems of noncompliance. This system, which has been in effect for approximately a year, has not proven to be totally effective. As a result of EPA's ongoing FY83 mid-year review, it now appears that a trend of incomplete reporting is emerging wherein sources are not being identified in monthly reports when violations have been documented at the state level for more than 30 days. Also, formal enforcement actions are being replaced by less formal, administrative actions such as permit modifications to show compliance. This movement away from traditional enforcement procedures presents a question of overall compliance program credibility.

(3) New Source Review

Rapid growth has occurred in the number and size of air pollution sources in the Southeast, and this pace is expected to continue. Inconsistencies in interpreting PSD requirements may be creating a situation where some states are more attractive to industries than others. Growth near Class I areas and in areas heavily dependent on tourism, such as the Great Smoky Mountains and Florida, may create problems with visibility, acid rain and PSD increments. Growth in areas with marginal air quality may experience problems with control requirements, modeling, and pre-construction monitoring, all of which may result in faulty permits. Correction after-the-fact is a perplexing problem. EPA overview is essential to ensure regional consistency and maximum effectiveness.

(4) Monitoring

Although all applicable ambient air monitoring regulations have been implemented to provide for timely and accurate submittal of data of acceptable completeness and representativeness, monitoring problems remain. These problems are basically two-fold: (1) significant turnover and loss of personnel and reductions in networks; and (2) poor data collection

coupled with a reluctance to report data that might lead to non-attainment designations. The result is that monitoring coverage has been shrinking and extensive overview efforts are required by Region IV to ensure that adequate information about air quality is available.

(5) Acid Rain

On at least four occasions, large fish kills at the Cherokee fish hatchery in the Southern Blue Ridge Province occurred within 2-4 hours following heavy rainfall, and an increase in "bent-spine" deformities in bass has been reported in the same area. The Southern Blue Ridge Province study will try to determine whether these are responses to acid rain. Due to the lack of scientific data, the full extent of the acid rain problem in the Southeast is unknown.

(6) Toxic Air Pollutants

An immediate concern exists regarding the environmental impact of toxic air emissions in Region IV. Requests from state/local agencies for technical information, EPA policy, and program implementation guidance regarding air toxics issues have rapidly increased. The state/local programs have expressed an urgent need for help in identifying, measuring, and establishing standards for these pollutants.

As new industrial products are developed, concern about toxic air pollutants increases. The scientific literature indicates a diverse array of toxic air emissions can result from synfuel operations. To date, five synfuel projects have PSD permits to begin construction on facilities. Two other applications are presently under review by the state agencies and EPA. Five more projects are expected to submit applications in the near future. Other procedures that might affect the program will be the permitting of new volatile organic chemical facilities, pesticide plants, and new NESHAPS facilities. Although new sources are of immediate concern, existing sources of toxic air emissions may be of greater concern and potential impact on human health. For example, Region IV EPA has identified 2676 major stationary sources that, based upon their SIC category, may have the capacity to emit potentially toxic air contaminants. The Region has 106 hazardous waste incinerators with the potential for requiring permitting. Also, the potential exists for toxic air emissions from 1439 existing hazardous waste storage and treatment facilities and 486 land disposal sites.

2. Implications For Agency Management

a. Regional Approaches

(1) Non-attainment Areas

(a) Tier II Areas

Region IV will continue to work with the states in the Southeast to develop effective non-attainment area plans for the tier II areas. The major tasks to be accomplished are to review air quality data, trends and plan effectiveness; evaluate control strategies; and coordinate development or revision of plans.

The immediate effect of EPA action on sanctions will be the necessity for an intense effort to finalize attainment status determinations. Region IV has recently received 14 requests from 6 states to redesignate a total of 287 areas to attainment.

For those non-attainment areas where Part D plans have not been effective, Region IV will make an indepth review of the elements of the original plan, including source emissions inventory, growth factors, control strategy and regulations.

The review of inventories and growth factors will require coordination with state agencies and contact with sources to verify emissions.

In the evaluation of control strategy demonstrations, Region IV will look at the applicability of air quality dispersion models and meteorological data sets. This evaluation must also determine whether the applicable regulations represent Reasonably Available Control Technology and if sources in, or impacting on, nonattainment areas are in compliance.

(b) Extension Areas

Region IV is working with the five extension areas to ensure implementation of the 1982 SIPs. Region IV will implement an overview program of the two inspection/maintenance programs in operation in Atlanta and Charlotte. This program will be extended to Memphis, Nashville and Louisville when these programs come on line by June 1984.

(c) Emerging and Continuing Non-attainment Areas

Region IV will be closely overseeing the state and local agencies to ensure that sufficient data are being collected to establish and track appropriate designation/redesignation of all areas.

During 1983 Region IV will work with the states in an effort to assure that a data recovery of at least 75 percent is made so that the attainment status can be verified. While we try to assure adequate data, we believe that the criteria for determining whether an area is urban or rural should be evaluated and revised if needed.

(d) Rural Ozone

Under the current ozone non-attainment policy, Region IV can only require VOC regulations for sources emitting greater than 100 tons per year.

(2) Adoption of Major SIP Elements

Region IV will use every available means to promote adoption of required SIP elements. These include technical assistance, use of contractors, and if necessary, grant conditions. While Region IV cannot shorten agency time frames for adoption, techniques such as parallel processing and direct final rulemaking will be utilized, where appropriate.

For major rulemaking, where all else fails, promulgation by Region IV will be considered.

(3) Compliance

To more fully evaluate the problem that Region IV perceives in its enforcement program and to initiate corrective actions as may prove appropriate, the following actions are either in process or under consideration.

- o Communication: Where the problem may be an incomplete understanding of the regional compliance policy, efforts will be taken to improve communications with state/local programs. Region IV will also prepare an updated guidance document consisting of previously issued policy and guidance.

- o Overview: When the problem appears to be more fundamental and/or actually represents differences of opinion, Region IV will initiate a thorough overview of a state/local program in an effort to clearly identify the underlying problem and develop corrective action. To this end, some individual programs may be subject to a special compliance audit that is separate from the regional midyear review program.
- o Inspections: With the implementations of the new compliance initiative, Region IV has relaxed its overview inspections to a level of some 1 to 2 percent of total major sources. This is down from the more recent level of 3 to 5 percent and significantly less than the 10 percent inspection level EPA performed during the mid to late 70's. To attain a greater confidence in the compliance status information currently being reported, Region IV intends to increase overview inspections to the 3 to 5 percent range and also increase efforts in the review of files in the regional or district offices that the states operate.
- o Enforcement: Region IV's present policy is to defer to a proposed state/local program's action plan to the fullest possible extent. Consistent with this policy was a commitment to refrain from any independent case development action on the part of Region IV. In the future, continuation of this policy will be subject to a case-by-case review and regional case development activity may be initiated at an earlier stage in the process than presently practiced.
- o Non-attainment Areas: Emphasis will be placed in areas that failed to demonstrate attainment of all ambient air quality standards or where attainment may be questionable. To this end, these areas will be the subject of increased inspections that will place special importance on the review of operation and maintenance practices and excess emissions reporting.

(4) New Source Review

Overview and assistance have become the basic EPA role in new source review. Region IV must use this role to monitor performance and give guidance to agencies and to assist in the performance of specific reviews. Inconsistencies in interpretation of new source requirements cannot be allowed to create a situation where industrial expansion is denied in some areas but approved in others. Region IV will seek to maintain uniformity in implementation of all new source requirements. Region IV will also work closely with all agencies to ensure consistency and to protect air quality standards and increments.

(5) Acid Rain

Region IV has begun to develop a Federally funded and state-operated monitoring network to determine the extent of the acid rain problem in the Southeast. In addition, EPA is working with TVA in the Southern Blue Ridge Province Study to provide an ecosystem evaluation of the effects from acid rain.

(6) Monitoring

Region IV needs to closely overview the state and local agencies to ensure sufficient data exist to establish and track attainment/non-attainment trends in all areas where pollutants are likely to be emitted and/or present in the ambient air. The economic impact of even small differences in air pollution concentrations requires the best quality, quantity, and representativeness of data possible; an excellent quality assurance program with enough adequately trained personnel is essential.

(7) Toxic Air Pollutants

State/local programs believe that one possible solution to the newly emerging air toxics problem is to exert some degree of control through their permit programs. They would also, where solid information is available, be willing to control existing sources through their permit program. They have been very emphatic, however, about needing information regarding the types of chemical emissions that should be controlled and regulated, pertinent health effects levels, the types of controls that are available, procedures for measuring and monitoring these pollutants, and how emission/ambient standards should be established. With this information the state/local programs will be able to deal with their air toxic problems by means of specific permit conditions contained in the construction and operating permits issued by these agencies.

Region IV is implementing many activities in the air toxics area to provide support to the state/local programs. Some of these activities include: the continuous dissemination of new technological and programmatic information, the investigation of computerized data systems with the capability to handle air toxics information, emphasis on quick and professional responses to state/local needs, serve as a regional clearinghouse to enhance regional consistency among the state/local programs, developing full knowledge of all current technologies that direct staff technical assistance can be provided, and the development of an Air Toxics Resource Center. Region IV staff will also be developing source emission inventories to assess potential air toxic problems, conducting modeling studies, collecting ambient monitoring data, and evaluating potential impacts on different population groups.

Through these efforts, Region IV staff will strive to build up the state/local programs in their air toxics efforts and have better coordination among all of our programs.

b. Assistance Needed From Headquarters Or Other Agencies

(1) Non-attainment Areas

EPA policy on non-attainment areas needs to be finalized to allow SIPs to be developed and implemented to attain and maintain the standards. EPA needs to implement a program to immediately designate new non-attainment areas to avoid criticism of unequal enforcement of the Clean Air Act. The current sanction policy deters the state and local agencies from gathering data showing new areas in violation of the ambient air quality standards. The current policy requires the immediate imposition of sanctions if an area is redesignated to non-attainment. This discourages states from identifying these areas and from developing plans to correct violations of the standards. The rural ozone policy needs to be revised to require consistent approaches in all major SMSAs.

Specific assistance from Headquarters is needed in the following areas:

- o Modeling Issues and Generic Regulations: The Office of Air Quality Planning and Standards needs to help resolve modeling issues related to generic state regulations. After these issues are resolved, state and local agencies will adopt approvable regulations. Headquarters will continue to provide review and approvability guidance regarding SIPs and Federal Register notices.

- o Ambiguities in State Regulations: Assistance will be required from the Office of Air Quality Planning and Standards to eliminate ambiguities in state regulations for national consistency. This office will likely have the lead in developing intermittent and fugitive dust test methods; EPA may choose to promulgate such methods.
- o Non-Generic Regulations: Headquarters needs to determine whether flexibility of affected state and local non-generic regulations is acceptable on a national basis.
- o Economic Turndown and Non-Attainment: Headquarters needs to provide guidance on the effect of the economic turndown and how it relates to the non-attainment status of an area and the applicable emissions inventory.
- o Reasonably Available Control Technology Guidance (CTG): Headquarters needs to publish reasonably available control technology documents in an expeditious manner; national guidance on regulatory requirements for Tier II cities is needed. Where previously issued CTGs have been frequently modified, Headquarters needs to reprint these CTGs in their final versions. The states are having difficulty in identifying the acceptable CTGs.

(2) Adoption of Major SIP Elements

Headquarters needs to issue guidelines emphasizing the need to adopt all required SIP elements and to recognize that certain elements, which may be a low priority nationally, are of greater concern in some regions. A reemphasis on promulgations as a remedy for SIP deficiencies and guidance on use of grant funds can aid in overcoming many problems.

On occasion, major SIP revisions are submitted by the states that cannot be acted on by the regions because of incomplete Agency policy. Headquarters needs to identify where incomplete policy is hampering actions in the regions and correct this situation.

As a result of a court order, EPA has recently proposed to regulate radionuclides at certain sources under the authority of NESHAPS. The role of the state is not clear on this issue. Expeditious guidance is needed from Headquarters.

(3) Compliance

Region IV needs timely and specific responses from Headquarters when specific guidance or policy interpretations are requested. For example, Region IV has the lead to resolve the noncompliance problem for 6 of the 25 identified significant violators. Action has been completed on four of these, but the remaining two are being held pending Headquarter's guidance.

In the past, Headquarters' contractual workshops have been excellent and well received by state/local programs. This level of support needs to be continued. This effort is particularly important in the areas of operation and maintenance practices, VOC inspections and continuous compliance techniques, and continuous emission monitoring.

In view of the problem Region IV perceived regarding full and timely reporting of compliance status by its state and local programs, national guidance would be useful to assure that Region IV is proceeding in a consistent manner to resolve the problem.

(4) New Source Review

Region IV will need applicability determinations for PSD, NSPS, and NESHAPS. Assistance on BACT and LAER determinations will also be needed. Interpretation of regulations and the establishment of precedents need to be conveyed to the Region. Guidance in unique modeling cases and in evaluating non-guideline modeling is needed.

(5) Acid Rain

With the increased awareness of acid rain, EPA should assign a priority to preparing an emissions inventory to show trends and predict long-range transport of total suspended particulates, sulfur dioxide, nitrogen oxides and ozones. Headquarters needs to consider designating a national group, such as the Environmental Monitoring Support Laboratory at Research Triangle Park, North Carolina, to track national meteorological conditions and their relationship to the pollutant concentrations measured as an air parcel moves long distances.

Monitoring methods and instrumentation badly need improvement and standardization for both the wet and dry fractions. Guidance is needed on the frequency for sampling, analysis and interpretation of data.

In addition, Headquarters needs to increase its support through increased funding of \$200,000 per year over the 5-year life span of the Southern Blue Ridge Province Acid Rain Study, which would provide Region IV with the information necessary to translate all of the existing acid rain research to the more temperate climate of the Southeast. Funds should come to Region IV instead of going directly from Headquarters to TVA. Funding from Headquarters excludes Region IV from participating in the management of the Plan. Public sentiment favors Congress and EPA acting on what is perceived as a serious environmental concern. Headquarters needs to expedite the review of the acid rain issue and, if appropriate, develop a legislative proposal to mitigate its effects.

(6) Toxic Air Emissions

The implementation of this effort requires close coordination with EPA Headquarters personnel because air toxics policies are in the early developmental stages. Meetings with appropriate Headquarters personnel and acquisition of pertinent policy and guidance documents as they are prepared will be imperative. Also, EPA Headquarters needs to pursue appropriate research and development projects to develop appropriate ambient air quality monitoring techniques, source sampling procedures, and reliable analytical techniques. In addition to the guidance and assistance needed from EPA offices in Washington and RTP, technical assistance may be needed from the Occupational Safety and Health Administration.

c. Additional Environmental Benefits Possible

(1) Non-attainment Areas

By finalizing national policy/guidance on non-attainment areas, Region IV and the states can continue developing and implementing SIP requirements to attain the NAAQS in the areas affecting 11 million people.

Headquarters assistance/guidance will provide national uniformity thus avoiding claims of regional inconsistency and inequity of treatment between states.

(2) Adoption of Major SIP Elements

Quicker clear-ups of environmental problems will result from overcoming problems with adoption of major SIP elements.

(3) New Source Review

Requirements will generally result in better air quality.

(4) Acid Rain

Acid rain and long range transport are interrelated issues of national and international concern. Headquarters assistance will result in:

- o the avoidance of over-regulating some local emission source(s) when the cause for poor air quality may be some source(s) at some remote location,
- o clarification of the actual sources of precursors of ozone measured in metropolitan and rural non-attainment areas, and
- o an improvement in the international relationships with Mexico and Canada.

Standard methods, instrumentation and guidance on the frequency for sampling and analysis will ensure the prudent expenditure of acid rain monitoring funds. The meaning of much acid rain data currently being collected is subject to debate.

(5) Air Emission

Headquarters assistance will result in the availability of information needed to protect the health and welfare of people living in the vicinity of industrial waste dump sites and industries that generate a vast number of different pollutants with unknown safe-exposure levels.

Table AQ-1

REGION IV QUARTERLY REPORT, SIGNIFICANT VIOLATORS

2nd QUARTER 82 - 83

Name CDS	Location	Compliance Status in CDS	Air Program	Source Size (SIP and NSR Sources Only)	Attn. Status (SIP Sources Only)	Lead Agency	Schedule to Achieve Compl.
<u>ALABAMA</u>							
International Paper Co. 01-0040-90010	Mobile	1	NSPS	A1A	—	E	Awaiting HQ guidance
<u>FLORIDA</u>							
Lone Star 10-0860-60020	Hialeah	1	PSD	A1A	—	S	Modifying PSD Permit
Arnold Cellophane 10-0860-00420	Miami	1	SIP	A1A	N	S	Action Plan rec'd 3/2/83—Under review NOV issued 3/22/83
Central Florida Pipeline 10-3240-90069	Taft	1	NSPS	—	N	S	Action Plan rec'd 3/2/83—Under review
Citrus Central, Inc. 10-3240-00034	Taft	2	SIP	A1A	N	S	Source Test
Austill Packaging* 10-1080-00238	Jacksonville	1	SIP	A1A	N	S	NOV issued 3/22/83 Action plan to be requested
<u>KENTUCKY</u>							
Armco Steel 18-0340-00005	Ashland	1	SIP	A1A	N	S	SIP in house under review
Ashland Oil 18-0340-00004							Published Bubble 3/22/83 FR

Table AQ-1, continued

REGION IV QUARTERLY REPORT, SIGNIFICANT VIOLATORS 2nd QUARTER 82 - 83

Name CDS	Location	Compliance Status in CDS	Air Program	Source Size (SIP and NSR Sources Only)	Attn. Status (SIP Sources Only)	Lead Agency	Schedule to Achieve Compl.
KENTUCKY Cont'd. 18-2600-80004	Calvert City	1	NESHAPS	A1A	—	E	Case filed. Negoti- ations underway
B. F. Goodrich 18-1920-80082	Louisville	1	"	A1A	—	E	Settlement Negoti- ations underway
Air Products & Chemicals 18-2600-80009	Calvert City	5	NESHAPS	A1A	—	E	Consent Decree signed. 3/16/83
Bell Concrete 18-0200-00019	Middlesboro	4	SIP	A2P	N	S	In compliance by inspection
WESTVACO 18-0100-90002	Wickliffe	3	NSPS, PSD	A1A	A	S	
G. E. 18-1920-00870	Louisville	2	SIP	A1A	N	S	Tested Compliance demonstrated
Rohm & Haas 18-1920-00189	Louisville	2	SIP	A1A	N	S	Test 1/10-14/83
TVA, Paradise 18-2960-00006	Drakesboro	6	SIP	A1A	N	E	Consent Decree to be modified
MISSISSIPPI							
International Paper, Co. 25-0040-90010	Natchez	1	NSPS	A1A	A	E	Awaiting HQ guidance

Table AQ-1, continued
REGION IV QUARTERLY REPORT, SIGNIFICANT VIOLATORS 2nd QUARTER 82 - 83

Name CDS	Location	Compliance Status in CDS	Air Program	Source Size (SIP and NSR Sources Only)	Attn. Status (SIP Sources Only)	Lead Agency	Schedule to Achieve Compl.
<u>SOUTH CAROLINA</u>							
Carolina Gravure*	Lexington	1	SIP	A1A	N	S	State has issued an admin. order and it is currently under review by EPA.
<u>TENNESSEE</u>							
Inland Container 44-1540-90010	New Johnsonville	2	NSPS	A1A	A	S	In comp. by source test 1/10/83. Doc. received 2/14/83
City of Lewisburg 44-2240-90012	Lewisburg	1	NSPS	A1A	A	S	Tested 2/14/83 Action Plan update to be received within 90 days.
Tenn-Luttrell Lime 44-3480-60028	Luttrell	5	PSD	A1A	A	S	AO complete and issued 1/13/83
Alco-Gravure* 44-3080-00004	Memphis	1	SIP	A1A	N	S	New Action Plan to be requested
Dixico* 44-3080-00094	"	1	"	"	"	"	"
Cleo Wrap* 44-3080-00153	"	1	"	"	"	"	"
Bryce Corp.* 44-3080-00321	"	1	"	"	"	"	"

* New Addition

TABLE AQ-2

POPULATION IN NON-POST 1982 EXTENSION AREAS

OZONE TRENDSSECOND MAXIMUM
CONCENTRATION IN
PARTS PER MILLION

<u>CODE</u>	<u>AREA</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>
G01	LOUISVILLE	0.190	0.140	0.130
F01	ATLANTA	0.150	0.145	0.135
G02	BIRMINGHAM	0.157	0.128	0.147
G01	MIAMI	0.150	0.140	N/A

<u>NON-ATTAINMENT AREAS</u>	<u>EXPOSED POPULATION</u>	<u>NUMBER OF TRANSPORTION CONTROL MEASURES</u>
ATLANTA	1,990,379	66
LOUISVILLE	828,103	6
NASHVILLE	495,200	6
MEMPHIS	882,100	5
CHARLOTTE	428,600	5

ADDITIONAL

MIAMI	1,610,000	8
FT. LAUDERDALE	1,016,100	6
W. PALM BEACH	564,410	3 or 4
ORLANDO	448,485	6 (82); 8 by (87)
JACKSONVILLE	607,703	7
ST. PETERSBURG	811,900	3
TAMPA	665,816	6
CHARLESTON, S.C.	289,000	3
COLUMBIA, S.C.	263,400	7

WATER QUALITY

1. Cause and Geographic Location of Major Environmental Problems

The following material is a detailed listing of the more significant water quality problems in the Southeast. These have been determined from the professional knowledge and experience of senior staff that have been with the water quality programs since well before EPA was formed. The listing is organized by source of the problem, type of problem, location, and cause. These problems coincide with the mapping of problem areas based on STORET data and on the 305(b) reports as supplemented by input from state and regional staffs (see Attachment A). Barriers to solutions of the problems are included in the next section under "Management Implications." A general ranking of these problems by source as "High," "Low" or "Medium" Priority is indicated based on staff judgment.

a. Domestic and Industrial Waste Discharges (High Priority)

(1) Toxics

Areas in Region IV where industries handle substances with high potential for toxicity or where problems have been reported include:

- o Mobile, Alabama -- chemical and other industries discharging to Mobile River and bay
- o Memphis, Tennessee -- Agricultural chemicals in Mississippi River and local streams
- o Kingsport, Tennessee -- Organic chemicals, heavy metals and organic discharges from the pulp and paper industry
- o Louisville, Kentucky -- Organic chemicals and metals in Ohio River
- o Birmingham, Alabama -- Iron and steel mill wastes in small streams
- o Amelia River, Florida -- Organic chemicals from pulp and paper mills
- o Wilmington, North Carolina -- Organic chemicals and metals in the Cape Fear River
- o Pascagoula, Mississippi -- Organic chemicals, refinery wastes in Gulf Coast waters

- o Eleven Mile Creek, Florida -- Pulp mill
- o Chipola River, Florida -- Battery salvage
- o Fenholloway River, Florida -- Pulp mill
- o Rice Creek, Florida -- Pulp mill
- o Banana River/Mosquito Lagoon, Florida -- Copper, chromium
- o Palm River, Florida -- Industrial chemicals specifically lead, copper, chromium
- o North Prong of the Alafia River -- Phosphate processing chemicals, lead, copper, zinc.

Dispersed but widespread problems resulting from the discharge of toxics, natural conditions, and historical land use activities include:

- o Mercury -- problems reported in lower Mobile River; southwest Florida; Pamlico and Albemarle Sounds; two North Carolina Piedmont streams closed to fishing; North Fork Holston River fishing ban.
- o PCB's -- problems in Weiss Reservoir, Alabama; Choccolocco Creek, Alabama; Greenville, Alabama; Coosa River, Georgia; Hartwell Reservoir, South Carolina; Ft. Loudon Reservoir, Tennessee; Beach Creek, Tennessee.
- o DDT -- residual, but serious, DDT contamination in Tennessee River at Triana, Alabama.
- o Trichloroethylene -- contamination of water supplies vicinity of Vero Beach, Florida.
- o Chlorine -- excessive use of chlorine at poorly operated municipal water treatment plants is a problem of region-wide significance. Waste toxicity attributable to chlorine was found at 10 of 12 (83 percent) plants studied by Region IV.

(2) Oxygen Depletion

Low dissolved oxygen is a widespread and common problem throughout the Southeast. It is a direct function of the discharge of decomposable organic wastes and is indirectly triggered by nutrient discharges with concomitant growth of nuisance algae and rooted plants. Sources of problems include:

- o Poorly operated municipal waste treatment facilities.
- o Lack of funds to provide adequate treatment facilities in small communities.
- o Overwhelming of oxygen assets by the sheer magnitude of discharges downstream from major municipal and industrial complexes.
- o Nonpoint source pollutant loads.

(3) Sanitary Quality

Bacteria and viruses render waters unsuitable for recreational use and have a severe impact on valuable shellfisheries in coastal areas. Major problems occur on small streams of eastern Tennessee and are a function of inadequate waste treatment by small communities. There have been severe declines in approved shellfishing waters in Alabama from 1974 to 1980. Potential use impairments are developing in rural coastal areas because of coliform loads from septic tanks in unsuitable soils.

b. Land Development (High Priority)

Massive and virtually unrestrained land development in Region IV during the past decade has resulted in severe and persistent water pollution problems and deleterious changes in the hydrologic regime and productivity in the waters of the coastal zones of the Region. Some examples include:

- o A shopping center and major highway constructed in north central Florida almost completely filled one arm of Lake Jackson (a major recreational lake) with silt.
- o Region IV studies in coastal areas of North Carolina and Florida have documented that canalization, filling, and concomitant development of coastal wetlands have severe impacts including:
 - Canals and adjacent waters are often hazardous to humans because of fecal contamination from septic tank leachate.

- Low D.O. in canals has created habitats unsuitable for aquatic life.
- Wetland losses have been shown to severely impact estuarine productivity and hydrology.
- Numerous wetland benefits are lost including storm buffering capacity, soil stabilization, and assimilation of pollutants in land runoff.
- o Use of insecticides to protect residents in coastal development projects create severe hazards for marine life.
- o Surface runoff and subsurface drainage from residences and marinas result in contamination and closure of valuable shellfish beds. Inland, siltation and turbidity from urban development has caused serious damage to water quality.

c. Mining (Medium Priority)

(1) Coal Mining

Many streams in Kentucky and eastern Tennessee show the direct effects of toxic metals from mine runoff. An emerging problem is potential pollution from synfuel projects being developed in coal rich areas.

(2) Peat Mining

The direct and indirect effects of peat loss on hydrology and water quality of coastal streams and estuaries are unknown. Adverse effects of peat mining are potential emerging problems in eastern North Carolina.

(3) Phosphate Mining

In central and south Florida, high dissolved solids and nutrients adversely affect streams of high quality that have unusual resource value. The potential for accidental release of these huge quantities of phosphatic clay slimes behind earthen dams is a serious threat to the nearby surface streams.

(4) Oil and Gas Production

Oil and gas drilling operations contribute significantly to poor water quality in Kentucky and eastern Tennessee.

d. Agriculture (Low Priority)

Inadequate soil erosion control practices cause severe and persistent colloidal clay turbidity in lakes and streams of the southeastern United States Piedmont region. Recent large scale wetland drainage, agricultural development projects, and removal of riparian vegetation and buffer zones in the lower Mississippi River Delta and the North Carolina coastal plain may have potentially severe impacts (saltwater intrusion, accelerated eutrophication, runoff, soil erosion, etc.) on hydrology and water quality. Extensive agricultural use of pesticides (both insecticides and herbicides) in the Mississippi River Delta of Tennessee and Mississippi have resulted in toxic levels of pesticides in fish tissues. Of particular concern is the trend of increasing toxaphene concentration in water and fish tissue from streams and lakes draining agricultural lands in Mississippi, Tennessee, Alabama, Florida, North Carolina, and South Carolina. Toxaphene is highly toxic to fish life, and fish kills from toxaphene have been reported in lakes and streams in South Carolina. The Everglades Agricultural area and the Biscayne Aquifer have also been identified as problem areas because of the potential for severe surface and groundwater contamination by pesticide residue.

e. Electric Power Generation (Medium Priority)

Major problems related to the power industry are losses of aquatic life entrained in cooling waters, thermal impacts and toxic metals. Most problems are highly site specific and include:

- o Thermal impacts on critical estuarine habitats such as areas rich in productive seagrasses and macroalgae.
- o Entrainment of valuable estuarine biota from intakes located in spawning and nursery areas.
- o Instances of toxic selenium discharges in freshwaters of North Carolina.

f. Lake Quality (Low Priority)

With the exception of Alabama, all states in Region IV have identified and classified all major lakes and impoundments. A wide range of problems were encountered at 36 percent of the 1034 lakes studied. Problems found include:

- o Nutrient enrichment at 128 (12 percent) lakes studied.
- o Turbidity and siltation at 100 (10 percent) of lakes.

- o Toxics problems at 19 lakes in the Mississippi River Delta area of Tennessee and Mississippi.

For lakes in urban areas, problems that impaired usage were found on lakes having an area of 80,096 acres or 73 percent of the total acreage of urban lakes studied.

2. Management Implications

a. Domestic and Industrial Wastes

To assure that developing toxics problems are detected in time to take preventive action, regulatory agencies should assure that adequate toxics monitoring programs are maintained. Since toxicity is a biological phenomenon, the Agency should develop a strong national policy promoting the use of toxicity testing and other biological methodologies in the NPDES program.

The Agency should support a strong program of Operation and Maintenance training.

A uniform national policy or procedure should be established by EPA and FDA on the responsibility of each Agency toward developing sewerage facility plans for discharge to shellfish harvesting waters. Present procedures require consultations between the two agencies as such plans are developed, but virtually no guidance is provided, and any constructive solutions are only on a case-by-case basis as worked out by regional staffs.

b. Land Development

The Agency should promote and fully fund programs to protect invaluable freshwater and coastal wetlands from destructive development. EPA's review role for the Corps of Engineers dredge and fill permit program (Sec. 404 of P.L. 92-500) should be strengthened.

c. Agriculture

To prevent the development of major water quality problems from extensive agricultural development in the Mississippi Delta and North Carolina coastal plain, Region IV is working closely with state agencies and the Corps to assure that adequate monitoring and evaluation programs are maintained.

Limited monitoring data are available to track the impact of agricultural chemicals in the Mississippi Delta and other agricultural areas of the Region. Most of the data in this report were from the few scattered stations monitored by the U.S. Fish and Wildlife Service. Although some states are conducting tissue analyses, these data are incomplete. Region IV is encouraging the increased use of residue analysis in the state water quality monitoring programs.

d. Power Generation

The majority of problems from power generation facilities are a function of poor site selection. The Agency should encourage states to establish strict siting laws similar to those in Florida.

e. Monitoring Programs

Virtually all water quality monitoring is now conducted by the states. As more programs are successfully delegated to the states, EPA will become even more dependent on the states for virtually all environmental data. For example, six of the eight states in Region IV currently have delegation of the NPDES program, and EPA must now look to these states for point source data.

The Section 305(b) Report is the main source of information about water quality problems in the states. Minimal resources, however, are devoted to these reports.

Biological data are even more difficult to obtain than chemical data. The BIOSTORET system was established years ago as a national computer base for biological data, and South Carolina and Florida have been involved with the system. A total capability was never implemented by Headquarters, however. Support is needed at Headquarters to develop the needed analytical capability and user support for BIOSTORET.

DRINKING WATER

1. Environmental Problems, Causes, and Barriers to Resolution

a. Ranking of Problem Areas

The problem areas identified in this report are summarized below. Each problem area has been assigned a ranking that represents the immediacy of the problem as viewed by Region IV.

- o High - Bacteriological MCL and M/R violation rates in excess of national average. The smallest systems are experiencing the highest violation rates. Only 6.9 percent of the total community water systems are responsible for more than 50 percent of the bacteriological M/R violations.
- o High - Districts in Kentucky and Florida with high bacteriological violation rates.

- o High - Organic contamination of groundwater supplies in south and central Florida.
- o Medium - Relatively high turbidity M/R violation rate in Kentucky.
- o Medium - Water shortage problems that are occurring particularly along coastal areas (e.g., major coastal population centers), especially the east coast of Florida.
- o Low - Inorganic violations for fluorides, lead, nitrates and selenium in Alabama, North Carolina, and at isolated systems throughout Region IV.
- o Low - Radiological violations, particularly in the Piedmont.

b. Causes of Problems

The high bacteriological violation rate can be attributed to the unusually high number of small community water systems in Region IV, and to associated low local operating budgets, unqualified and inadequately trained operating personnel and a lack of understanding among operators of federal and state requirements.

Problems with organic contamination in south and central Florida are somewhat dependent on the high precursor levels prior to chlorination and the necessary use of groundwater as the primary source of potable water.

The water shortage problems in Region IV exist as a result of the expanding uses of water and inconsistencies in the eastern water rights laws governing water use.

c. Barriers to Problem Solutions

Declining federal and state resources are barriers to further reduction in the bacteriological violation rates. Also, the low operating budget and lack of qualified personnel, which are characteristics of many of the small community systems, make compliance with EPA regulations extremely difficult.

The major barrier to the elimination of organic contamination in south and central Florida is the lack of data available to identify the major contaminants and areas of contamination. Also, it is important that the adverse health effects of the various contaminants be established so that the public can become more aware of potentially harmful chemicals.

d. New Analytical/Program Tools Needed

Region IV has begun analyses of compliance on a routine basis (formal report annually and informal reviews quarterly) to assist states in managing compliance programs. An increase in priority at the state level may be needed in some cases if compliance levels begin to decline.

For organic contaminants where health risk is high, more data are needed for individual water supplies in order to determine whether controls are appropriate. More controls may also be needed at some sources of contamination (surface discharges) but little is being done in this area. In Region IV, coordination of NPDES permit issuance and impacts on drinking water is presently being undertaken. If positive results are obtained, this effort will be emphasized where states have NPDES delegation.

Water shortage issues are not solely within the purview of EPA and are therefore more difficult to address. Better techniques for dealing with water shortage concerns must be addressed by state and local governments. Where problems have been encountered, this type of effort is, for the most part, underway (e.g., the Water Management Districts in Florida).

2. Implications for Agency Management

The approaches being used in Region IV, and needed assistance from Headquarters and other agencies, are discussed in more detail in Attachment A and in the preceding sections and will only be summarized in this section.

a. Regional Approach

- o MCL and M/R violations are being analyzed on annual and quarterly basis. Methods for improving compliance rates are being developed jointly between states and EPA. Techniques implemented to date include:
 - Increased technical assistance to states
 - Quarterly informal data review and feedback to states
 - Increased emphasis on compliance by upper level state and EPA officials
 - Establishment of compliance goals for each state experiencing compliance problems

- Additional training of state personnel
- Assistance to states in the use of the computerized data management systems (MSIS/FRDS)
- Joint EPA/State meetings on compliance

Compliance improvement methods that are most successful will be shared with other states and regions.

- o Volatile organic compound problem areas are being logged and controls implemented where needed to avoid adverse and substantial health effects. However, because of lack of regulatory authority, control of organic compounds that affect drinking water has been difficult. Also, as noted below, lack of health effects data has had an impact on controls of organic compounds. The exception is the program governing trihalomethanes (THM). Where THM problems have been identified, states are actively pursuing controls to bring the systems into compliance.
- o Volatile organic compounds entering surface sources via pollutant discharges are being addressed in NPDES permits. Routine coordination between permits and drinking water staff is occurring where EPA retains responsibility for NPDES permits.

b. Headquarters and Other Agency Assistance Needed

Assistance is needed from Headquarters in minimizing impacts on state drinking water programs by reducing budget cuts. Proposed budget levels allotted to states in FY84 will have a substantial effect on the ability of some states to deal with drinking water problems. Without offsetting increases in state budgets, the trend toward improved compliance with Safe Drinking Water Act requirements will be reversed, potentially resulting in increased exposures of the public to health risks. Additionally, emphasis on bacteriological contamination problems needs to be continued. Decreased attention to bacteriological problems as more emphasis is placed on organic contamination problems will quickly affect compliance rates for microbiological requirements.

Health effects data on organic contamination must be developed and should be directed by Headquarters policies. Health effects guidance must also be further developed, particularly for toxics not presently being reviewed by the National Drinking Water Advisory Council.

A coordination program to address emerging quantity problems should also be developed and should involve the numerous federal agencies that are partially responsible for water resources.

GROUNDWATER

1. Environmental Problems, Causes and Barriers to Resolution

Groundwater contamination is a problem common to all areas of the Southeast, but there is a large degree of variation in both the nature and severity of the problems. In recent years, EPA has focused its attention principally on hazardous waste almost to the exclusion of other groundwater pollution problems. Hazardous waste certainly ranks as one of the greatest threats to groundwater. In Attachment A of this report, 12 pollution sources and associated groundwater problems are discussed. Below these pollution sources are grouped into three categories indicative of their relative impact on groundwater quality. The definition of the pollution sources is self-explanatory except perhaps for uncontrolled sites and landfills. Uncontrolled sites and landfills are unmanaged with no known owner/operator.

<u>Severe</u>	<u>Moderate</u>	<u>Limited</u>
Spills and leaks	Mining	Agricultural activities
Uncontrolled sites	Septic tanks	Injection wells
RCRA land disposal facilities*		Landfills**
Oil and gas development		Groundwater development
Surface impoundments**		Land application

* Existing or interim status

** Other than RCRA facilities

At present, there are two areas in Region IV where groundwater problems appear to be more critical than elsewhere. The first is southeast Florida where the Biscayne Aquifer, the principal source of drinking water for more than 3 million people, is subjected to multiple threats. The second consists of parts of several oil producing counties in eastern Kentucky where widespread contamination of surface water and groundwater supplies by saltwater is occurring. Water quality problems in the Biscayne Aquifer and contamination problems caused by oil and gas development are discussed in Attachments B and A, respectively. Other areas in the Southeast where serious groundwater problems may exist include:

- o Surficial aquifer systems in Florida (see Figure GW-1, Attachment A).
- o Karst areas in the Floridian, Valley and Ridge, and Central Plateau groundwater provinces (refer to Attachment A).

- o Oil producing counties in Mississippi and Kentucky.

Policy and organizational changes needed to upgrade groundwater protection will be difficult to achieve. Barriers to effective groundwater quality management inherent in the existing legal/regulatory system have been discussed at length in policy documents prepared by EPA and in numerous reports and articles. The principal obstacles according to Region IV staff are:

- o Legal/regulatory gaps - Examples include lack of control over discharge of pollutants to groundwater from (non-RCRA) surface impoundments and use of chlorinated solvents as septic tank cleaners.
- o Inadequate resources - Budget and personnel constraints are already at a critical level in some states. Further cutbacks in federal support proposed for FY84 will forestall, and perhaps eliminate, any new groundwater protection efforts. Region IV faces similar problems.
- o Inadequate monitoring and data management - The problems associated with groundwater monitoring and data management reflect the complexities of groundwater resources.
- o Lack of a system for reporting and tracking contamination problems - Contamination problems are discovered by or reported to various state and federal programs but there is no focal point to which this information can be channeled for compilation.

Program tools needed to upgrade groundwater protection have been identified in EPA's draft groundwater policy. These include:

- o State groundwater strategies,
- o Groundwater coordinating mechanisms in Headquarters and regional offices,
- o Work groups to tackle programmatic and technical issues,
- o Information on groundwater contamination incidents.

The only thing to add to this list would be regional groundwater strategies.

2. Implications for Agency Management

Because a draft national groundwater policy has now been published, Region IV plans to begin to work on a regional groundwater strategy immediately. It should be completed by the end

of FY83. Concurrently, information on contamination incidents will be compiled. This effort, however, will require the cooperation of the states and other program offices within the Region.

It is imperative that EPA's groundwater policy be finalized in the near future and the implementation activities outlined therein be carried out. The draft policy document, however, omitted or minimized certain needs that are critical to fulfilling the goal of groundwater protection, including:

- o Training - Because of the increased amount of groundwater monitoring being done, particularly under RCRA, there is a need to provide classroom and in-field training to selected state employees on proper groundwater sampling procedures.
- o Resources - Establishment or expansion of state-wide monitoring networks, additional sampling and analytical work and improvements in data management will require additional expenditures. With many state budgets frozen and projected cutbacks in federal support, states will not be able to increase their groundwater surveillance capabilities and may even have to cut back.
- o Statutory/Regulatory Revision - The draft groundwater policy has clearly overstated the groundwater protection provision of federally mandated programs. Because state regulatory programs are for the most part based upon EPA's, they too contain gaps in groundwater protection. While it is not necessary to enact new federal programs to fill these voids, selective revisions to specific federal laws may be necessary to get the attention of state legislators; or failing in that, to enable EPA to control waste disposal practices that threaten groundwater but are presently beyond its jurisdiction.

The principal benefit to be derived from implementation of EPA's groundwater policy, in conjunction with the additional steps mentioned above, is greater protection of groundwater resources. The policy goal may not be achieved, however, if EPA fails to acknowledge and act on resource problems and regulatory gaps.

WETLANDS

1. Environmental Problems, Causes and Barriers to Resolution
 - a. Wetland drainage, clearing and conversion for agriculture and silviculture

These activities result in losses of the greatest acreage of vegetated wetlands in the Southeast. Foreign and domestic production pressures have made land conversion expense an economical investment, especially for large corporations. Factors limiting regulatory protection of these areas include:

- o inconsistent EPA/Corps' jurisdictional determinations;
- o Corps' permissive policy in the Lower Mississippi Valley Division regarding land clearing and their assignment of a lower ecological value to "legally cleared" wetlands when evaluating subsequent permit requests;
- o the new nationwide permit issued under the July 22, 1982, Corps' regulations authorizing activities in isolated wetlands, regardless of size, without individual project review;
- o opposing judiciary opinions that affect enforcement capabilities in Mississippi.

Land clearing and conversion is a problem throughout Region IV, especially in the Mississippi Valley areas of Mississippi and Tennessee, the Florida Panhandle, wetlands south of Lake Okeechobee in Florida, the North Carolina coastal plain, and south Georgia, and is anticipated to be a problem of growing magnitude.

- b. Water quality degradation resulting as an indirect impact of wetland development or conversion

Wetlands filter pollutants and trap sediments transported in surface waters. Where wetlands have been developed or converted, this water treatment capability is diminished or lost. As a result, polluted surface runoff from urban and industrial areas and croplands does not benefit from wetland filtration and contributes to water quality degradation in receiving water bodies. To alleviate future problems, wetland development and conversion must be discouraged. Current philosophy within both EPA Headquarters and the Corps apparently fails to recognize the role wetlands play in maintaining and improving water quality. Also, there seems to be a failure by EPA Headquarters and the Corps to acknowledge the significance of the authority granted under the Section 404 process.

- c. Lack of suitable disposal sites for dredged material

Throughout the coastal perimeter of Region IV, there appears to be a steady and potentially increasing demand for federally sponsored dredging for maintenance and deepening of

navigational channels. This results in the generation of tremendous quantities of dredged material. The lack of environmentally suitable sites for these materials is a significant problem. Historically, dredged materials were disposed at upland sites, used to fill wetlands, or discharged in adjacent aquatic areas. Region IV discourages disposal in vegetated wetlands or in productive aquatic sites, and instead, recommends disposal on upland sites or in deep ocean waters beyond the shallow, productive coastal zone when upland sites are unavailable. Problems emerge over the Corps' continued disposal in valuable vegetated wetlands, destruction of shallow water-bottoms through the creation of spoil islands, and discharges into nearshore open water areas.

Studies by the Corps show that the technology for ocean disposal of dredged material exists and that in many cases is a cost effective option. EPA should encourage use of designated ocean disposal sites, designate additional sites if needed, and encourage the Corps towards long term planning to assure availability of ocean-going disposal vessels.

d. Direct loss of wetlands through fill activities

It is estimated by the Corps that 2500 acres of regulated wetlands within Region IV, largely in the coastal zone, are destroyed annually by filling operations. (This figure does not include losses under Item 1.c.) Prior to implementation of the Clean Water Act, wetland losses were far greater. Pressures for urban encroachment into wetlands continue, however, largely due to the population shift to the South. The cumulative impact of this continued, gradual wetland destruction is resulting in losses of important wildlife habitat, fish and shellfish productivity, filtration of water-borne pollutants and shoreline protection. Filling wetlands for non-water dependent activities is clearly contrary to the Section 404(b)(1) guidelines and Corps' regulations. A problem arises from inconsistent application of the guidelines both within and among Corps districts. As discussed further under item 2.b., Implications for Agency Management, EPA's ability to influence Corps' decisions is greatly hindered under the current Memorandum of Agreement (MOA).

e. Impacts of surface mining in wetlands

One of the major problems in Region IV involves phosphate mining in Florida and North Carolina. Problems associated with phosphate mining in wetlands include destruction of wetlands, discharge of nutrients to adjacent water-bodies, and inability to restore large-scale mining sites to previous wetland conditions. Existing regulations should provide adequate

protection for high value wetlands; however, we are frequently placed in the position of arguing for long-term maintenance of a high value ecosystem versus short term economic gains from phosphate mining done primarily for foreign markets. Suggested solutions include prohibiting mining of high value wetlands, and permitting mining in wetlands of lesser value contingent upon demonstrated reclamation and wetland community restoration success. Demonstration projects are underway in Region IV to assess the practicability and probability of success of restoration of these mined wetlands.

f. Oil and gas exploration, development and production

A moderate number of producing wells occur throughout the Southeast and adjacent coastal waters. There has been a recent increase in seismic activity, particularly in the coastal deltas of Mississippi and Alabama, the Mississippi Sound, the Eastern Gulf, the Georgia Bight and the Continental Shelf edge from Florida to North Carolina. Concerns include:

- o compatibility of energy related dredge and fill activities in valuable and unique wetlands (i.e., the Everglades, Mobile Delta, etc.);
- o impacts of drilling muds and cuttings discharges in tidally influenced productive waters.

Efforts to resolve and/or improve understanding of these problems are underway. Region IV is participating as a cooperative agency with the Mobile District Corps of Engineers in developing a generic Environmental Impact Statement (EIS) addressing impacts of oil and gas operations in the Mobile Delta and coastal waters of the states of Alabama and Mississippi. Emphasis in this generic assessment is toward defining best available technology and best management practices to guide industry in activity planning and to provide the reviewing and permitting agencies with a consistent evaluation tool. Completion of the document is scheduled for 1984.

Region IV is currently formulating a study plan directed at determining the fate and impact of muds and cuttings discharged from drilling activities in federal waters that are shallow and/or near state waters. Neither Alabama nor Mississippi allows discharge of these materials in any state waters. These states have expressed concerns to EPA that drilling activities in federal waters adjacent to the 3-mile limit of state waters may result in movement of discharged materials into state-owned waters and affect coastal aquatic community. A technical committee including Region IV and industrial and state representatives have organized a workshop that will be

conducted in 1983 for the purpose of developing specific study design. Hands-on research efforts are expected to commence early in FY84. Tentative plans call for use of the EPA "OSV Antelope" as the survey vessel, with a carefully selected team of technical experts aboard to take measurements. These scientists would represent the academic, industrial and regulatory communities and the resultant study conclusions would be presented as a joint effort.

g. Water quality and related concerns in Section 404 regulated impoundment projects

Experience in Region IV has indicated that large-scale impoundment projects constitute significant environmental problems including:

- o flooding important wetlands, mostly bottomland hardwoods and agricultural lands;
- o converting free-flowing systems to flat-water, thereby altering aquatic community structures; and,
- o degrading water quality due to unfiltered and untreated stormwater runoff from adjacent development, nutrient buildup, algal blooms, aquatic weed problems, reduced assimilative capacity, lowered dissolved oxygen, etc.

Concern over the impacts from this type of project are so great within Region IV that conflicts have arisen over three major impoundment projects, Lake Alma (Georgia), Columbia Dam (Tennessee), and Frank Jackson State Park (Alabama). Region IV requested elevation of the first two of these projects for review at a higher level of authority. Problems with smaller impoundments have occurred throughout the Region, particularly in South Carolina and Mississippi.

In both cases of elevation, EPA was overruled and permits were sustained. Region IV feels a great need for strong Headquarters support in stressing the importance of wetlands, especially in the face of residential and recreational lake development pressures.

h. Water quality impacts associated with marinas and dead-end canal projects

Marina development in some productive shellfish areas has caused closures of oyster and clam beds due to contamination by fecal coliforms from boats concentrated at marinas. Runoff from residential areas associated with marina development also contributes to water quality degradation.

Region IV is currently conducting a study to assess problems and develop design and siting criteria for freshwater canals. Section 10/404 permits should be denied when identified problems cannot be eliminated or reduced to an environmentally acceptable level.

Development projects which include excavation of dead-end canals can pose significant water quality problems. New construction of saltwater canals has drastically decreased because of general recognition of this problem with saltwater canals and effective Corps regulation. A problem with the development of freshwater canal systems is emerging, however. This is particularly evident throughout the Tennessee-Tombigbee Waterway in Alabama and Mississippi, where application for major port facilities, industrial canals and complex canal designs for water front residential development are common. Region IV has recently conducted a survey of water quality problems and jointly developed design and siting criteria for these projects with the Corps of Engineers, the U.S. Fish and Wildlife Service and the states of Alabama and Mississippi.

2. Implications for Agency Management

- a. The revised Section 404(g) Memorandum of Agreement between EPA and the Corps includes the following provisions which should be amended to alleviate their inherent restraints:
 - (1) Elevations can be requested only in instances involving emerging national policy, development of new information, or lack of agency coordination. This precludes the most common need for elevation - Region IV's concern that Corps' permit issuance will result in environmental degradation.
 - (2) Time constraints and authority level required in the internal preparation process are unduly restrictive.
 - (3) The Assistant Secretary of the Army (Civil Works) decides whether the case will be reviewed at a higher level. The Corps can arbitrarily refuse an elevation request, thus precluding EPA influence in this decision.
 - (4) The Regional Administrator must sign all routine recommendations for project modification or denial and requests for time extensions to comment periods. This imposes an inordinate hardship on the Regional

Administrator. These routine matters were previously handled at the programmatic level. The MOA needs to be amended to allow for delegation of that responsibility by the Regional Administrator.

b. EPA's responsibilities for delegation of the Section 404 program to the States

Under Section 404(g) of the Clean Water Act, EPA has the authority to delegate Section 404 program administration to the states. The Corps of Engineers is aggressively pursuing development of state-wide general permits for broad-ranging activities with potentially major environmental consequences. Region IV is concerned that this approach by the Corps is not only contrary to the purposes of general permits, but more importantly, this action may circumvent EPA's statutory authority and responsibility for directing state assumption of Section 404 program administration.

EPA should apply more critical review relative to the Corps' issuance of general permits and subsequent transfer of the administration of these permits to the states.

c. Lack of Section 404 regulation of civil works projects

Civil works result in more direct and/or indirect destruction of wetlands and water quality degradation than all other activities covered under Section 404, with the possible exception of land conversion for agriculture and silviculture. Even this land conversion is largely facilitated through Corps sponsored flood control levee construction or stream channelization. Navigational access to and within inter/intra-coastal waterways and major port facilities is maintained through Corps dredging operations. This causes highly significant problems. Although major projects are addressed through the NEPA/EIS process, this has not provided an adequate mechanism in the past for EPA to influence the Corps' project priorities and plans for implementation. A poignant example is the resistance by the Mobile District to seriously consider deep ocean disposal of vast quantities of materials routinely dredged for navigation maintenance. Complicating the issue are the Corps' plans to significantly deepen and extend the present channel, which will generate an estimated 150 million cubic yards of dredged material. The anticipated Corps solution to this problem is fastland creation for industrial development at the expense of productive, shallow estuarine waters in and adjacent to Mobile Bay, clearly contrary to explicit tenets of the Section 404(b)(1) guidelines.

Similar problems with civil works maintenance dredging projects exist elsewhere in the Region. The Cooper River re-diversion project in South Carolina, maintenance and expansion of port facilities in Jacksonville, Miami, Tampa and Pascagoula, and other civil works projects are all adversely impacting wetlands and aquatic resources.

Discussions with the Corps at the Headquarters level are needed to emphasize Agency concerns and to develop more acceptable options for resolving these significant problems. The Corps needs to focus greater emphasis on realistic planning of small-scale projects and on the use of advanced dredging and disposal technology.

d. Conflicts over responsibilities for Section 404 permit exemption decisions

According to the 1979 opinion of Attorney General Benjamin Civiletti, EPA has the ultimate authority to designate jurisdictional wetlands and to determine what qualifies as an exempted activity under Section 404(f). For operation efficiency, EPA signed a Memorandum of Agreement with the Corps whereby the Corps will routinely determine the jurisdictional extent of wetlands; however, EPA retains the authority to identify special categories or types of cases that will be referred to EPA for jurisdictional determinations. No such mechanism has been developed for exemption determinations. EPA has recently experienced a situation where the Corps made an exemption determination contrary to the Region IV position. A mechanism to resolve such conflicts is needed.

e. Inability to properly assess effectiveness of the Section 404 program

Under the current Corps of Engineers systems, no mechanism exists for the reliable quantification of wetlands lost through individually permitted projects or through projects conducted under general or nationwide permit authorization. Nor is there a general accounting method for wetland losses resulting from unauthorized activities or Corps civil works projects.

To make an accurate assessment of the program effectiveness and to identify aspects of the program that may need improvement, it is important that the Corps initiate a comprehensive program to document wetland losses regulated under Section 404 and civil works projects. This program could include a simple computerized system which could be made available to EPA and the other two review agencies, the U.S. Fish and Wildlife Service and the National Marine Fisheries Service.

f. Deficiencies of the Section 404 Enforcement Program

Problems exist within the Corps Section 404 enforcement program due to irregular surveillance, failure to monitor permit compliance, sluggish internal administrative responses to alleged violation and numerous other factors. Enforcement is the single largest factor in public perception of the effectiveness of this program. EPA Headquarters should urge the Corps to place higher priority on enforcement aspects of this program and provide adequate resources to Region IV to lend technical and legal support for the Corps' efforts.

g. Primary purpose test regarding the definition of fill material in wetlands

EPA considers any discharge of material into jurisdictional wetlands as fill material regulated under Section 404. The Corps has imposed a restriction on the definition, requiring that the primary purpose of the fill be creation of fastland. It does not regulate the disposal of wastes as fill material under Section 404. The EPA Guidelines clearly state this conflict. Resolution is badly needed.

HAZARDOUS WASTE CONTROL

o Resource Conservation and Recovery Act (RCRA)

1. Problem Areas

The RCRA program is not old enough for a well defined data base to be in existence which would allow specific environmental problem definition. The changing regulatory scheme during the last 2 years has hindered development of a data base as rapid state authorization removed the primary control of the regulated community data base from EPA. As a result, EPA must rely on state information, which usually has considerable lag time and loses quality in translation and handling. The Agency's changing direction concerning liquids in landfills, groundwater data and annual reports has delayed the consolidation of state requirements on the regulated community. The net effect is lack of a present data base in most areas of the program.

a. Regulations

Regulations do not adequately address the problems encountered with synfuel facilities, hazardous air emissions, recycling, and the burning of hazardous fuel. Headquarters should expedite regulation development.

b. Growth and Waste Generation Increase

The projected industrial growth in Region IV translates to a potential for greater hazardous waste production, which will bring increases in the number of small generators of hazardous waste, solid waste (non-hazardous) disposal, and a need for additional waste recycling and alternative technology facilities capable of treating waste to a non-hazardous state thereby relieving the Region's anticipated dependence on land disposal facilities. Public awareness and public education is needed in these areas. There are no such activities funded at this time.

2. Pending Problems Requiring Immediate Resolution

Following are management problems which the program should address during FY83 (For more detail refer to Appendix A):

a. Annual Report

All Region IV state legislatures require an annual report of generators and Treatment, Storage and Disposal Facilities (TSDFs), which create confusion with EPA's requirement of bi-annual reports.

b. Groundwater

Lack of groundwater monitoring data at facilities and lack of quality control of all aspects of the groundwater monitoring program are a problem. Headquarters should develop regulations in this area.

c. Training of State Personnel

Training of state personnel to insure consistency is not adequately addressed in the RCRA program. RCRA funding should be shifted to this area.

d. State Authorization

States may lose their authorization because of failure to receive final authorization by the statutory date. Headquarters should ask for an extension to the deadline.

e. Small Quantity Generators

Additional control of small quantity generators of wastes is needed. With accelerated growth of small firms, this is becoming a major loophole. Headquarters should develop more stringent regulations to include more small quantity waste generators.

f. Permit Application Quality

Failure of industries to submit adequate applications for permits has been a problem. Headquarters, region and states should conduct more training and step up enforcement of permit quality requirements.

g. CERCLA Remedial or Planned Action - RCRA Permits

The Agency needs to resolve the question of whether CERCLA remedial and planned actions are subject to RCRA permit requirements.

h. Permitting Land Disposal Facilities

The regulated community does not understand the land disposal regulations which creates problems in getting good quality and complete land disposal permit applications. Headquarters, region and states should conduct more training and step up enforcement of permit quality requirements.

3. Barriers

The following are barriers of longer term problems which the Agency should be addressing during FY84 (for more detail, refer to Appendix A):

a. Groundwater Data

The Agency needs to develop procedures and regulations governing quality control of groundwater monitoring.

b. Burning Hazardous Waste as Fuels

The Agency needs to promulgate the regulatory definition of a fuel and develop workable regulations for hazardous wastes as fuel.

c. Permitting Land Disposal Facilities

Public opposition and industries lack of understanding of land disposal regulations will increase workload and difficulty in permitting land disposal facilities. Training and public education should be developed and conducted at all levels.

d. State Authorization

More resources are needed to make a maximum effort toward meeting the January 1985 deadline for final authorization.

e. Recycling

Regulations to control recycling activities are inadequate and inconsistent. Headquarters should step up development of regulations to address this area.

f. Solid Waste (Non-Hazardous) Disposal

Resources need to be shifted to accommodate the workload associated with siting of landfills for non-hazardous solid waste.

g. Hazardous Air Emission

Headquarters needs to provide regulations and methods that can establish non-compliance with those regulations when air emissions occur at hazardous waste facilities.

h. Synfuel Facilities

Better understanding is needed for the hazards of wastes generated at synfuel facilities. Headquarters must accelerate the study in this area and develop a regulatory scheme for these wastes.

i. Training of State Personnel

State hazardous waste personnel need training in all aspects of the RCRA program. Funds need to be shifted to accommodate this.

j. Support of Recycling Activities

The Agency needs to provide leadership in the area of recycling waste to energy. Funds should be shifted to this area.

k. Large Commercial Land Disposal Facilities

Region IV's two commercial hazardous waste landfills drain the Region's and host states' resources inordinately. The Subtitle C grant formula should consider this resource drain to these states.

o Superfund

1. Problem Areas

- a. Cleanup of hazardous waste sites is hampered by requiring the states to match funds throughout the remedial process. Only three Region IV states have any method of cost sharing.

- b. Policy guidance for cost recovery actions to recover monies disbursed from the Fund for investigation and remedial action is ambiguous and/or nonexistent.
- c. The emergency response program suffers from lack of resources, technological problems, inadequate training of local responders, inadequate laboratory support, reporting problems and a lack of emergency U.S. Coast Guard.
- d. The most significant geographical concern is the exposure of groundwater to hazardous contamination, particularly in Florida.
- e. States are reluctant to participate in a non-delegated Federal CERCLA compliance and enforcement program.
- f. An average of 3-4 years is required from project initiation to project completion of all phases of work involved. See PERT charts for 21 superfund sites in Attachment A.

2. Barriers

- a. EPA policy requirements for state matching funds for Remedial Investigations and/or Feasibility Studies.
- b. Lack of EPA policy guidance for enforcement and cost recovery actions.
- c. Lack of sufficient state personnel resources to handle multiple sites.

RADIATION

1. Environmental Problems

- a. Insufficient shallowland disposal sites for low-level radioactive waste. This situation exists largely because of a lack of clear, comprehensive and nationally accepted criteria, standards and guidelines.
- b. Accumulation of radon gas (a carcinogen) in structures built on reclaimed phosphate lands and/or unmined land having phosphate out-croppings. Although EPA/Office of Radiation Programs (ORP) has issued "recommendations" for the State of Florida to control this problem, a generic national standard is needed in order to provide the states with a technical basis for establishing state standards.

- c. Decrease in the quality, and consequently the benefit to participating Federal, state and local agencies, of annual exercising of Nuclear Power Plant Utility/states radiation emergency response plans. This is due primarily to economic and staffing (use of staff who normally perform other functions in the states' radiological health program) considerations which could curtail participation and exercising frequency. EPA representatives serve as both players and evaluators in these exercises and the Agency's "Protective Action Guides" provide the basis for determining actions which must be taken to protect the health and safety of the public and hence must be properly implemented for these exercises to be effective.
- d. Potential health impact of non-ionizing radiation sources. There is significant public interest and concern on this problem with such environmental sources as radar, radio frequency and high voltage transmission lines. National standards are badly needed in order to inform the public about acceptable radiation levels and to provide the states with a basis for standard setting.

PESTICIDES

- 1. Pesticide Problems in the Southeast
 - a. Discussion of Priority Ranked Problems
 - (1) Pesticide Aerial Application

Pesticide aerial application has proved to be a concern to the Agency and Region IV states as drift onto nontarget crops continues to occur. In cooperative agreements entered into between EPA and the Region IV states, aerial drift is always singled out as a major priority problem, heretofore unresolved.

Recent data indicate that the violation rate per inspection for both agricultural and nonagricultural pesticide use/misuse investigations (drift problems are included in this category) has decreased in the Region; however, the violation rate still exceeds 60 percent based on the number of inspections performed. These data reflect total state involvement in the enforcement grant program.

(2) Pesticide Poisonings

Pesticide poisonings, although generally associated with product misuse, are still a concern because of the personal suffering associated with such a tragedy. The implementation and enforcement of the Agency's rules on Child Resistant Packaging (CRP) should reduce the number of child poisoning incidents. Tracking of the effectiveness of the regulation and any environmental results will largely depend on the quality of the medical data generated by the doctors and hospitals involved. Historically, the data collected have been sketchy and addressed much broader categories than children. Representative background information for child poisonings is presented in Figure P-2, Attachment A. At southeastern facilities participating in the survey, the incident level for the 3 most recent years has remained constant.

(3) Groundwater Contamination

Pesticide groundwater contamination is considered to be an emerging problem (see Attachment B).

(4) Use/Misuse Investigations

Use/misuse investigations show a high violation rate (it still exceeded 60 percent based on FY82 data). A large contributor to the misuse violation rate is the misuse of insecticides and termiticides by PCOs. Analyses of states' inspectional work and responses to citizens' inquiries identify this as a resource intensive effort. While a large number of reputable pest control companies exist, there are also many marginal operations leading to misapplications, license violations and revocations, causing alarm among the general populace. Recent publicity on chlordane, heptachlor, and dieldrin are examples of the interest that can be generated. Better guidelines for enforcement are needed in the areas of correct application and acceptable residues both on surfaces and in the ambient air.

(5) Pesticide Storage and Disposal

The large number of both private and commercial applicators (350,000) who store pesticides and must also dispose of waste from restricted use pesticides creates a large potential problem. Farmers and homeowners are addressed by Agency policy and are exempt from RCRA requirements, because that statute excludes "household waste" from its definition of hazardous waste. For commercial applicators, there are no guidelines for disposal, and while it is likely that violations would be uncovered during FIFRA inspections, violations of both FIFRA and

RCRA would probably exist. Since no definitive areal study has been attempted in Region IV to ascertain the extent of this problem at the present time, all existing data would be considered the "tip of the iceberg." Improper storage and disposal of bulk containers and improper disposal of water used to rinse aircraft used for spray application have the potential to exacerbate existing groundwater contamination problems or create new ones.

(6) No Till Cropping

Payment in kind (PIK) and no till cropping are considered to be emerging problems associated with a change in pesticide use (see Attachment B).

(7) Aquatic Weeds

Exotic aquatic weeds such as hydrilla, water hyacinths, and Eurasian water milfoil have become firmly established in lakes, streams, rivers, canals and ponds in Region IV. Some waterways are rapidly becoming unusable for recreation (swimming, fishing, boating), transportation and as a productive area for fish propagation. Weed-choked drainage canals have become virtually useless for moving large quantities of water during emergencies precipitated by heavy rains. Research on biological controls (water hyacinth weevil, sterile hybrids and grass carp) continues to show that such controls are not effective alone and must be followed by, or used in conjunction with, other controls. Herbicides have provided the most effective control.

The extent of the hydrilla problem alone is evidenced by the fact that 6 out of 8 Region IV states have infestations of greater than 100,000 acres. Not only has the problem spread geographically within the Region, but the degree of infestation in each state identified (all Region IV states except Kentucky and North Carolina) has increased markedly over the last two decades.

(8) Emergency Exemptions

The number of emergency exemptions requested under Section 18 of FIFRA has grown dramatically during the past 3 years. For example, the number of requests received and acted upon by the Agency has increased from approximately 100 in FY79 to about 500 in FY82. Of this number, over 90 requests were received from Region IV states. There has been considerable questioning about whether some of these requests are necessary and whether the system is being abused by potential registrants who attempt to market and distribute products prior to full registration.

In addition, two Section 18 emergency exemptions (ferriamicide for fire ant control in Mississippi, and DBCP for control of nematodes in peaches in South Carolina) became extremely controversial and called into question Agency policy regarding issuance. Thus, it is not just the number of exemption requests now being received and granted that is of concern. Since the exemption requests include cancelled or suspended pesticides that were involved in the RPAR process, a certain risk to health and the environment must be assumed to be taking place. In addition, environmental impacts of nitrosamine-containing chemicals, or those whose Section 18 data base may have included IBT data, cannot be disregarded.

(9) Mosquito Control

In addition to the aforementioned problems, aquatic plants also offer breeding areas for mosquitos -- both disease-bearing and nuisance varieties. Maintenance and control of mosquito populations through aerial application of mosquitocides present the potential problem of drift into freshwater lakes and the saltwater of coastal areas. Evaluation of the effect of such applications on the environment as well as the alternative application methods should be an ongoing program.

(10) Imported Fire Ant (IFA) Control

The IFA is a pest with a long history of infestation in the southeastern United States. Current estimates of the degree of IFA infestation over a 10-state area in the eastern and southern US identify some 240 million acres as being infested, bringing the IFA into direct conflict with an estimated 40 million inhabitants. In Region IV states, Alabama reports that only 3 of its 67 counties remain free of infestation, and every land acre in Florida is infested according to Florida IFA program director. Mississippi reports migration into northern portions of the state formerly free of the ant. Georgia indicates that areas wherein some control had been achieved with Mirex were reinfested following ban of the chemical.

The infestation in Mississippi led to the State requesting a specific exemption (under Section 18 of FIFRA) for the use of ferriamicide to provide wide area control to the 26 million acres in the State. While several insecticide formulations are registered for IFA control, no registered material (in the opinion of Mississippi officials) meets the criteria of (1) practicality of application, (2) effectiveness over a wide range of use conditions (environmental and meteorological),

(3) safety to man and the environment the application, (4) economic feasibility and (5) availability. Similar requests for ferriamicide use were made by Arkansas and Texas. The problem is two-fold: first, the infestation and impact of the pest on individuals and agriculture; and second, the implication of Agency actions regarding registration of additional pesticides or the granting of exemptions in the absence of registration. Pursuant to requests from Texas, Arkansas and Mississippi, the Agency granted a specific exemption for use in these states. Litigation initiated by the National Audubon Society and others caused Mississippi to withdraw the application for exemption, stating it would be refiled in 1983. Depending upon the disposition of the new request and the effectiveness of the proposed applications of ferriamicide, other states in Region IV with serious infestations may consider similar actions.

(11) Pesticide Residues

Increasing amounts of residues of a wide variety of pesticides is a result of direct application or indirect contamination. A better understanding of their degradation, movement, and effects is necessary.

(12) Integrated Pest Management

Integrated pest management is a relatively new approach to an old problem, namely, how to insure crop protection by controlling pest populations while minimizing effects on people and the environment. IPM attempts to make the most efficient use of strategies available to control pest populations.

b. Implications for Agency Management

(1) Aerial Application and Drift

Some solutions to the problem are beginning to be implemented through the use of "fly ins"; however, regional sources are needed to provide an expanded federal presence at these events. Many questions remain unanswered with regard to policy for mixing pesticides for aerial application. In addition, clarification of the use of vegetable oil as an anti-drift agent to reduce drift (LV and ULV applications) is needed, both in better enforcement guidance and policy.

(2) Pesticide Poisonings

In theory, one solution to accidental pesticide poisonings of children is in place through the promulgation of regulations requiring child resistant packaging for certain pesticide products. Administration of this program and effective enforcement have yet to be realized. The lack of required reporting and the strict registration interpretation and requirements are current barriers to smooth, efficient implementation of the program.

(3) Groundwater Contamination

Groundwater contamination with pesticides can come from a variety of sources and impact a number of Agency programs. If misuse of a federally-registered product can be documented as the reason for the contamination, the compliance program, rather than the registration program, would be primarily impacted. Similarly, this would be true for improper storage and disposal of pesticide containers or rinse water. However, if directions for use have been followed and groundwater contamination still results, the registration of the chemical itself would be questioned. One of the most significant implications for Agency management is to ensure that groundwater contamination incidents from registered chemicals be evaluated with scrupulous regard to quality of data so that challenges to the integrity of the registration process can be withstood. In these situations, the Agency should, to the degree resources allow, take a more active role in the collection of data, not just the evaluation of someone else's data. The current controversy with the use of Temik in Florida is a case-in-point wherein the quality of the groundwater samples themselves certainly could be questioned.

(4) Use/Misuse Investigations

The states have most of the primary responsibility for use/misuse investigations particularly with regard to the activities of PCOs. Unfortunately, they are being asked to do "more with less." Reducing grant funding in the enforcement of pesticide laws makes it more difficult for the states to address misuse while simultaneously handling registration activities and new federal requirements (CRP and LIP). The cooperative agreement program has been highly successful, and the states have been doing a very professional job, but they need the resources to keep pushing ahead. Management consideration should be given to increasing rather than decreasing grant funding to more adequately address the problems of pesticide misuse. Additionally, the question of residues in the air and/or surfaces after pesticide treatment, applications of termiticides at less than labeled dose, and interpretation of the NAS guidelines (EPA's position on the guidelines) need to be addressed in a manner that assists the states in their inspectional and enforcement efforts.

(5) Pesticide Storage and Disposal

Two issues surface quantifying the extent of the storage/disposal problem. First, better guidance on disposal for commercial applicators would reduce the problems. Second, a coordinated effort is needed regarding Agency staff involved with RCRA investigation and enforcement. Field inspectors in both programs could be cross-trained to conserve resources while achieving the same result of compliance.

(6) No Till Cropping

Until the program is established, an accurate assessment is difficult to make of either increased or decreased use patterns of specific types of pesticides (herbicide or insecticide). USDA estimates the PIK will reduce harvested acreages by 23 million. The Agriculture Department predicts that no till cropping will increase through the 1980's and 1990's. By the year 2000, 65 percent of all major crops in the U.S. are projected to be grown with no till farming. From an Agency perspective, problems identified with these programs are primarily related to registration and labeling. This is particularly true for fallowed lands, not the cropped area under PIK, and residue tolerances for the grazing requirements under PIK. In addition, registrations for weed control on fallow land and labeled directions for the non-crop areas are insufficient to allow smooth operation of this program. Since registration and labeling programs direct themselves to the application of a particular pesticide to a particular site (crop) for a particular pest, how would fallowed lands be treated since no crop exists there, but pests do? Regional monitoring efforts will be required to provide adequate enforcement capability and assistance to the states.

(7) Aquatic Weeds

The aquatic weed problem is high priority in Region IV because conditions are ideal for excessive growth of exotic plants. Barriers to at least a potential solution to this problem lie in the registration of herbicides for surface waters. This is particularly true with the establishment of residues for potable or multiuse waters. Better coordination with other agencies (e.g., state health departments), with other staff in EPA (e.g., drinking water programs) and a concentrated effort to make available risk/benefit analyses and economic implications of failure to address the problem are needed. Resources for increased federal presence are required for training other agencies and for comparing mechanical vs. chemical controls.

(8) Emergency Exemptions

The increase in the number of Section 18 Emergency Exemption requests submitted by the states and granted by the Agency is of great concern. The ability to monitor such exemptions effectively requires resources simply not available in the Region. The lack of an adequate enforcement mechanism is also a barrier to a coordinated Section 18 program. Currently, withdrawal of the exemption from the state lead agency is the only way to remedy a violation, and since the states themselves have few resources for monitoring, this type of solution is not likely to occur.

(9) Mosquito Control

The aerial application of mosquito adulticides adjacent to sensitive estuarine systems is an emerging concern in south-central and southeast Florida.

Many of the mosquitocides used (e.g. fenthion and malathion) are highly toxic to crustaceans and fish, thus label restrictions prohibit application over water. Unfortunately, where aerial spraying is practiced, at least two factors make label enforcement difficult, if not impossible:

- o land and water areas along the southeast Florida coast and the Florida Keys are discontinuous making aerial spraying difficult to limit to land areas alone,
- o EPA studies show that significant quantities of aerially sprayed adulticides drift to non-target areas.

EPA should encourage the development of adult mosquito control methods that do not endanger economically important marine resources. As stated by Mr. Nat Reed, former Assistant Secretary of the Interior for Fish, Wildlife and Parks, at a November 20, 1982, Snook Symposium in Ft. Lauderdale, Florida:

"EPA should put more effort into how to kill a mosquito without losing fisheries resources."

"Label restrictions on mosquitocides should be strictly enforced."

"Alternative mosquito control methods should be found."

For spraying pesticides with broad spectrum toxicity on land adjacent to sensitive estuarine ecosystems, the EPA should consider prohibiting aerial spraying of adulticides and limit operators to the use of land-based spray application methods in these particularly sensitive areas.

(10) Imported Fire Ant (IFA) Control

An Agency-sponsored symposium dealing with the IFA problem was held during 1982. The consensus of the assembled experts was that the fire ant is truly a pest from the point of view of human involvement (public health). Recent data concerning the agricultural impact of the IFA show that it is an economic pest as well. The perceived severity of the IFA as a nuisance or public health problem has been delineated in surveys that show about one million households have used insecticides for IFA control.

Recent data indicate the IFA substantially impacted soybean production in Mississippi where infestations of greater than 40 mounds per acre reduced yields as much as 33 1/3 percent. Based on production of soybeans in the State for the years 1980 and 1982, this corresponds to losses of \$32-58 million. Regional losses could be extrapolated dependent upon the size of the plantings (for this crop alone), but other crops are impacted as well (e.g., cotton, sugar cane). Even with the existence of such data, those individuals with solely agricultural interests may have difficulty marshalling the resources necessary to implement a national program of eradication.

Barriers exist to a partial solution of the control, if not the eradication, of the pest. Biological control is currently not possible; physical and cultural manipulation (once thought to deter colony establishment) appear to be generally ineffective; flooding and burning do not destroy IFA colonies. Integrated pest management has not been effective because chemicals have given only temporary relief; however, broad scale eradication attempts by using insecticides alone may not be a tenable management option. The Agency will be expected to make decisions regarding the registration of chemical compounds for partial control of the IFA. The decisions rendered may be controversial and visible, particularly with regard to the carcinogen policy and the data requirements under Section 3 of FIFRA.

(11) Pesticide Residues

The Agency should, to the degree resources permit, support research to better understand the effects and fate of pesticides in the biota, sediments, and surface resources.

(12) Integrated Pest Management

The Agency should, in cooperation with USDA, support vigorous research in IPM programs.